MORRISON'S

SPRING TABLES

A HANDBOOK

FOR ENGINEERS, STUDENTS, AND DRAUGHTSMEN

BY

EGBERT R. MORRISON

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PREFACE.

In offering this book to the public, the author desires to call attention to the general scheme which has been followed.

Springs fall naturally into two classes, light and heavy: in the case of helical springs called wire and bar; in elliptical springs called sheet and plate. In the following pages the writer has considered a helical spring whose bar is less than one-sixteenth of an inch in diameter, or an elliptical spring whose plate is less than one-sixteenth of an inch in thickness, to be a light spring.

In helical springs the ratio between the diameter of the bar (or similar dimension in other than circular sections) and the mean diameter of the spring forms the basis of calculation in estimating the various properties of the spring. In elliptical springs the basis of calculation is the ratio between the thickness of the plate and the span or net length of the spring. The span or net length of a spring is the distance between centers less the width of the band.

The properties of heavy springs may be arranged easily under each size of bar or thickness of plate, inasmuch as the number of fundamental ratios for each bar is practically definite. On the other hand the numerous gauges of wire and sheet and the extremely small differences which are made in the dimensions of light springs render the number of fundamental ratios for light springs prohibitive to a table of spring properties for each gauge.

In the present tables, therefore, the writer has arranged the properties of light springs under graduated values of the fundamental ratio, so that the properties of any light spring may be quickly determined from its peculiar ratio. The properties of heavy springs are tabulated under each size bar or plate.

The table on rectangular and elliptical sections is designed for use in connection with the other tables on helical springs, the properties of springs made of such sections being easily determined by proportion. The sections considered are sections of the bar

after coiling. A rectangular bar will not produce a rectangular section spring.

The mathematical tables are included to facilitate the use of formulæ.

One inch of solid height has been taken as a working basis in the case of helical springs; while for elliptical springs the basis has been taken as one plate one inch wide.

All calculations presented in this book are based on a fiber strain of 80,000 pounds per square inch. The modulus of elasticity is taken at 12,600,000 for helical springs, at 25,400,000 for elliptical springs. These figures are good practice for ordinary heavy steel springs. Calculations of springs made of material having other physical properties are simple proportions employing such properties and the tabulated values of steel springs.

Throughout the book the loads are given in pounds while all dimensions are in inches.

EGBERT R. MORRISON.

CONTENTS.

PART I. — FORMULÆ.

PART II. — MATHEMATICAL TABLES.

PART III. — SPRING TABLES.

MORRISON'S SPRING TABLES.

PART I.

FORMULÆ.

FORMULÆ NOTATION.

Coil: —

S = Stress solid — 80,000.
G = Modulus torsional elasticity — 12,600,000.
w = Weight one cubic inch of steel
π = 3.1416.
f = Deflection.
H = Free height.
h = Solid height.
h_1 = Any height.
P = Capacity solid.
P_1 = Load at h_1.
W = Weight of spring.
L = Blunt length of bar.
D = Mean diameter of coil.
d = Diameter of round bar.
b = Width of rectangular bar.
t = Edge upon which rectangular bar is wound.

Elliptical: —

S = Working static stress — 80,000.
E = Modulus of elasticity — 25,400,000.
P = Load.
f = Deflection.
n = Number of plates.
b = Width of plates.
h = Thickness of plates.
L = Span, equal to distance between center of bearings minus width of band, also designated $C-C$ in tables.
r = Percentage of "blunt," or full-length leaves.

FORMULÆ — HELICAL — ROUND BAR — SINGLE COIL — GENERAL.

$$f = \frac{\pi S}{G}\left(\frac{D}{d}\right)^2 h = \frac{H}{1 + \frac{G}{\pi S}\left(\frac{d}{D}\right)^2}.$$

$$H = h\left[1 + \frac{\pi S}{G}\left(\frac{D}{d}\right)^2\right].$$

$$L = \pi \frac{D}{d} h = \frac{H}{\frac{S}{G}\left(\frac{D}{d}\right) + \frac{1}{\pi}\left(\frac{d}{D}\right)}.$$

$$W = \frac{\pi^2 d D h w}{4} = \frac{2\,G w}{S^2}(P f).$$

$$P = \frac{\pi S}{8} \cdot \frac{d^3}{D} = \frac{G}{8} \cdot \frac{f}{h} \cdot \frac{d^5}{D^3}.$$

$$S = \frac{8}{\pi} \cdot \frac{D}{d^3} P = \frac{G}{\pi} \cdot \frac{f}{h}\left(\frac{d}{D}\right)^2.$$

$$G = \pi S \frac{h}{f}\left(\frac{D}{d}\right)^2 = 8\,P \frac{h}{f} \cdot \frac{D^3}{d^5}.$$

$$h = H - f \frac{h.}{1 + \left(\frac{P - P_1}{P}\right)\left[\frac{\pi S}{G}\left(\frac{D}{d}\right)\right]}.$$

FORMULÆ — HELICAL — RECTANGULAR BAR — SINGLE COIL — GENERAL.

$$f = \frac{\pi S}{G} \cdot \frac{D^2}{t\sqrt{t^2+b^2}} h = \frac{H}{1 + \frac{G}{\pi S}\left(\frac{t\sqrt{t^2+b^2}}{D^2}\right)}.$$

$$H = h\left[1 + \frac{\pi S}{G}\left(\frac{D^2}{t\sqrt{t^2+b^2}}\right)\right].$$

$$L = \frac{\pi D h}{t} = \frac{H}{\frac{S}{G}\left(\frac{D}{\sqrt{t^2+b^2}}\right) + \frac{1}{\pi}\left(\frac{t}{D}\right)}.$$

$$W = \pi b D h w = \frac{3Gw}{S^2}(Pf).$$

$$P = \frac{S}{3} \cdot \frac{bt\sqrt{t^2+b^2}}{D} = \frac{G}{3\pi} \cdot \frac{f}{h} \cdot \frac{bt^2(t^2+b^2)}{D^3}.$$

$$S = 3\frac{D}{bt\sqrt{t^2+b^2}} P = \frac{G}{\pi} \cdot \frac{f}{h} \cdot \frac{t\sqrt{t^2+b^2}}{D^2}.$$

$$G = \pi S \cdot \frac{h}{f}\left(\frac{D^2}{t\sqrt{t^2+b^2}}\right) = 3\pi P \frac{h}{f}\left[\frac{D^3}{bt^2(t^2+b^2)}\right].$$

$$h = H - f = \frac{h_1}{1 + \left(\frac{P-P_1}{P}\right)\left[\frac{\pi S}{G} \cdot \frac{D^2}{t\sqrt{t^2+b^2}}\right]}.$$

FORMULÆ — HELICAL — ROUND BAR — SINGLE COIL — STEEL.

$$f = .019946 \left(\frac{D}{d}\right)^2 h = \frac{H}{1 + 50.1337 \left(\frac{d}{D}\right)^2}.$$

$$H = h\left[1 + .019946 \left(\frac{D}{d}\right)^2\right]$$

$$L = 3.1416 \frac{D}{d} h = \frac{H}{.006349 \left(\frac{D}{d}\right) + .3183 \left(\frac{d}{D}\right)}.$$

$$W = .6991\, dDh = .00111562\, (Pf).$$

$$P = 31{,}416 \frac{d^3}{D} = 1{,}575{,}000 \frac{f}{h} \cdot \frac{d^6}{D^3}.$$

$$S = 2.54648 \frac{D}{d^3} P = 4{,}010{,}695 \frac{f}{h} \left(\frac{d}{D}\right)^2.$$

$$G = 251{,}328 \frac{h}{f} \left(\frac{D}{d}\right)^2 = 8 P \frac{h}{f} \cdot \frac{D^3}{d^6}.$$

$$h = H - f = \frac{h_1}{1 + \left(\frac{P - P_1}{P}\right)\left[.019946 \left(\frac{D}{d}\right)^2\right]}.$$

FORMULÆ — HELICAL — RECTANGULAR BAR — SINGLE COIL — STEEL.

$$f = .019946 \frac{D^2}{t\sqrt{t^2+b^2}} h = \frac{H}{1 + 50.1337\left(\frac{t\sqrt{t^2+b^2}}{D^2}\right)}.$$

$$H = h\left(1 + .019946 \frac{D^2}{t\sqrt{t^2+b^2}}\right).$$

$$L = 3.1416 \frac{D}{t} h = \frac{H}{.006349 \frac{D}{\sqrt{t^2+b^2}} + .3183 \frac{t}{D}}.$$

$$W = .89012\, bDh = .001673\, (Pf).$$

$$P = 26{,}667 \frac{bt\sqrt{t^2+b^2}}{D} = 1{,}336{,}898 \frac{f}{h} \cdot \frac{bt^2(t^2+b^2)}{D^3}.$$

$$S = 3 \frac{D}{bt\sqrt{t^2+b^2}} P = 4{,}010{,}695 \frac{f}{h} \cdot \frac{t\sqrt{t^2+b^2}}{D^2}.$$

$$G = 251{,}328 \frac{h}{f} \cdot \frac{D^2}{t\sqrt{t^2+b^2}} = 9.4248\, P \frac{h}{f} \cdot \frac{D^3}{bt^2(t^2+b^2)}.$$

$$h = H - f = \frac{h_1}{1 + \left(\frac{P - P_1}{P}\right)\left[.019946 \frac{D^2}{t\sqrt{t^2+b^2}}\right]}.$$

FORMULÆ—HELICAL, CONCENTRIC COILS.

Where $\frac{D_1}{d_1}$ is numerically less than all other ratios of $\frac{D}{d}$ for round bars.

Where H_1 is the height of the combined coils under any load P_1.

Where H, h, S, and G are the same for all coils.

For steel springs:

$$\frac{\pi S}{G} = .019946. \qquad \frac{G}{8} = 1{,}575{,}000. \qquad \frac{G}{3\pi} = 1{,}336{,}898.$$

Round bars:

$$h = \frac{h^1}{1 + \frac{\pi S}{G}\left(\frac{D_1}{d_1}\right)^2 - \frac{P_1}{\frac{G}{8}\left(\frac{d_1^5}{D_1^3} + \frac{d_2^5}{D_2^3} + \frac{d_3^5}{D_3^3} + \cdots\right)}}.$$

Rectangular bars:

$$h = \frac{h_1}{1 + \frac{\pi S}{G}\left(\frac{D_1^2}{t_1\sqrt{t_1^2 + b_1^2}}\right) - \frac{P_1}{\frac{G}{3\pi}\left[\frac{b_1 t_1^2 (t_1^2 + b_1^2)}{D_1^3} + \cdots\right]}}.$$

FORMULÆ — ELLIPTICAL — GENERAL.

Full elliptic with all leaves graduated:

$$P = \frac{2\,Snbh^2}{3\,L}. \qquad f = \frac{SL^3}{2\,Eh}.$$

Full elliptic with portion of leaves graduated:

$$P = \frac{2\,Snbh^2}{3\,L}. \qquad f = \frac{1}{2+r} \cdot \frac{SL^3}{Eh}.$$

Semi-elliptic with all leaves graduated:

$$P = \frac{2\,Snbh^2}{3\,L}. \qquad f = \frac{SL^3}{4\,EH}.$$

Semi-elliptic with portion of leaves graduated:

$$P = \frac{2\,Snbh^2}{3L}. \qquad f = \frac{1}{2\,(2+r)} \cdot \frac{SL^3}{EH}.$$

FORMULÆ — ELLIPTICAL — STEEL.

Full-elliptical with all leaves graduated:

$$P = 53{,}333\,\frac{nbh^2}{L}. \qquad f = .0015748\,\frac{L^2}{h}.$$

Full-elliptical with portion of leaves graduated:

$$P = 53{,}333\,\frac{nbh^2}{L}. \qquad f = \frac{1}{2+r}\left(.0031496\,\frac{L^2}{h}\right).$$

Semi-elliptical with all leaves graduated:

$$P = 53{,}333\,\frac{nbh^2}{L}. \qquad f = .007874\,\frac{L^2}{h}.$$

Semi-elliptical with portion of leaves graduated:

$$P = 53{,}333\,\frac{nbh^2}{L}. \qquad f = \frac{1}{2+r}\left(.0015748\,\frac{L^2}{h}\right).$$

PART II.

MATHEMATICAL TABLES SUPPLEMENTARY TO FORMULÆ.

Fractional Parts of π.

π	3.1416	$\frac{\pi}{13}$	.2417
$\frac{\pi}{2}$	1.5708	$\frac{\pi}{14}$	.2244
$\frac{\pi}{3}$	1.0472	$\frac{\pi}{15}$	.2094
$\frac{\pi}{4}$	.7854	$\frac{\pi}{16}$	.1964
$\frac{\pi}{5}$	.6283	$\frac{\pi}{17}$	.1848
$\frac{\pi}{6}$	.5236	$\frac{\pi}{18}$	.1745
$\frac{\pi}{7}$	.4488	$\frac{\pi}{19}$	.1653
$\frac{\pi}{8}$	.3927	$\frac{\pi}{20}$	.1571
$\frac{\pi}{9}$	.3491	$\frac{\pi}{21}$	.1496
$\frac{\pi}{10}$	.3142	$\frac{\pi}{22}$	.1428
$\frac{\pi}{11}$	.2856	$\frac{\pi}{23}$	.1366
$\frac{\pi}{12}$	.2618	$\frac{\pi}{24}$	.1309

Fifth Powers.

No.	Power.	No.	Power.	No.	Power.	No.	Power.
$\frac{1}{16}$	.000000953674	$\frac{9}{16}$	.0563135	$1\frac{1}{16}$	1.35408	$1\frac{9}{16}$	9.31323
$\frac{1}{8}$	.0000305176	$\frac{5}{8}$	.0953674	$1\frac{1}{8}$	1.80203	$1\frac{5}{8}$	11.3310
$\frac{3}{16}$	.000231743	$\frac{11}{16}$	.153590	$1\frac{3}{16}$	2.36139	$1\frac{11}{16}$	13.6842
$\frac{1}{4}$	.000976562	$\frac{3}{4}$	.237305	$1\frac{1}{4}$	3.05176	$1\frac{3}{4}$	16.4131
$\frac{5}{16}$	.00298023	$\frac{13}{16}$	.354093	$1\frac{5}{16}$	3.89490	$1\frac{13}{16}$	19.5610
$\frac{3}{8}$	.00741577	$\frac{7}{8}$	.512909	$1\frac{3}{8}$	4.91489	$1\frac{7}{8}$	23.1743
$\frac{7}{16}$	.0160284	$\frac{15}{16}$	.724196	$1\frac{7}{16}$	6.13818	$1\frac{15}{16}$	27.3029
$\frac{1}{2}$	.0312500	1	1.000000	$1\frac{1}{2}$	7.59375	2	32.0000

Cubes.

No.	Cubed.	No.	Cubed.	No.	Cubed.	No.	Cubed.
1/16	.000244	2 7/8	23.763672	5 11/16	183.977295	8 1/2	614.125000
1/8	.001953	2 15/16	25.347412	5 3/4	190.109375	8 9/16	627.771729
3/16	.006592	3	27.	5 13/16	196.376221	8 5/8	641.619141
1/4	.015625	3 1/16	28.722900	5 7/8	202.779297	8 11/16	655.668701
5/16	.030518	3 1/8	30.517578	5 15/16	209.320068	8 3/4	669.921875
3/8	.052734	3 3/16	32.385498	6	216.	8 13/16	684.380127
7/16	.083740	3 1/4	34.328125	6 1/16	222.820557	8 7/8	699.044922
1/2	.125000	3 5/16	36.346924	6 1/8	229.783203	8 15/16	713.917725
9/16	.177979	3 3/8	38.443359	6 3/16	236.889404	9	729.
5/8	.244141	3 7/16	40.618896	6 1/4	244.140625	9 1/16	744.293213
11/16	.324951	3 1/2	42.875000	6 5/16	251.538330	9 1/8	759.798828
3/4	.421875	3 9/16	45.213135	6 3/8	259.083984	9 3/16	775.518311
13/16	.536377	3 5/8	47.634766	6 7/16	266.779053	9 1/4	791.453125
7/8	.669922	3 11/16	50.141357	6 1/2	274.625000	9 5/16	807.604736
15/16	.823975	3 3/4	52.734375	6 9/16	282.623291	9 3/8	823.974609
1	1.	3 13/16	55.415283	6 5/8	290.775391	9 7/16	840.564209
1 1/16	1.199463	3 7/8	58.185547	6 11/16	299.082764	9 1/2	857.375000
1 1/8	1.423828	3 15/16	61.046631	6 3/4	307.546875	9 9/16	874.408447
1 3/16	1.674561	4	64.	6 13/16	316.169189	9 5/8	890.666016
1 1/4	1.953125	4 1/16	67.047119	6 7/8	324.951172	9 11/16	919.149170
1 5/16	2.260986	4 1/8	70.189453	6 15/16	333.894287	9 3/4	926.859375
1 3/8	2.599609	4 3/16	73.428467	7	343.	9 13/16	944.798096
1 7/16	2.970459	4 1/4	76.765625	7 1/16	352.269775	9 7/8	962.966797
1 1/2	3.375000	4 5/16	80.202393	7 1/8	361.705078	9 15/16	981.366943
1 9/16	3.814697	4 3/8	83.740234	7 3/16	371.307373	10	1000.
1 5/8	4.291016	4 7/16	87.380615	7 1/4	381.078125	10 1/16	1018.867432
1 11/16	4.805420	4 1/2	91.125000	7 5/16	391.018799	10 1/8	1037.970703
1 3/4	5.359375	4 9/16	94.974854	7 3/8	401.130859	10 3/16	1057.311279
1 13/16	5.954346	4 5/8	98.931641	7 7/16	411.415771	10 1/4	1076.890625
1 7/8	6.591796	4 11/16	102.996826	7 1/2	421.875000	10 5/16	1096.710205
1 15/16	7.273193	4 3/4	107.171875	7 9/16	432.510010	10 3/8	1116.771484
2	8.	4 13/16	111.458252	7 5/8	443.322266	10 7/16	1137.075928
2 1/16	8.773682	4 7/8	115.857422	7 11/16	454.313232	10 1/2	1157.625000
2 1/8	9.595703	4 15/16	120.370850	7 3/4	465.484375	10 9/16	1178.201660
2 3/16	10.467529	5	125.	7 13/16	476.837158	10 5/8	1199.462891
2 1/4	11.390625	5 1/16	129.746338	7 7/8	488.373047	10 11/16	1220.754639
2 5/16	12.366455	5 1/8	134.611328	7 15/16	500.093506	10 3/4	1242.306641
2 3/8	13.396484	5 3/16	139.596436	8	512.	10 13/16	1264.091064
2 7/16	14.482178	5 1/4	144.703125	8 1/16	524.093994	10 7/8	1286.138672
2 1/2	15.625000	5 5/16	149.932861	8 1/8	536.376953	10 15/16	1308.436768
2 9/16	16.826416	5 3/8	155.287109	8 3/16	548.850342	11	1331.
2 5/8	18.087891	5 7/16	160.767334	8 1/4	561.515625	11 1/16	1353.816650
2 11/16	19.410889	5 1/2	166.375000	8 5/16	574.374268	11 1/8	1376.892578
2 3/4	20.796875	5 9/16	172.111572	8 3/8	587.427734	11 3/16	1400.229248
2 13/16	22.247314	5 5/8	177.978516	8 7/16	600.677490	11 1/4	1423.828125

Cubes. — *Continued.*

No.	Cubed.	No.	Cubed.	No.	Cubed.	No.	Cubed.
11 5/16	1447.690673	11 7/8	1674.560547	12 7/16	1923.964600	13	2197.
11 3/8	1471.818359	11 15/16	1701.140381	12 1/2	1953.125000	13 1/16	2228.840088
11 7/16	1496.212646	12	1728.	12 9/16	1982.568604	13 1/8	2260.986328
11 1/2	1520.875000	12 1/16	1755.140869	12 5/8	2012.306641	13 3/16	2293.440186
11 9/16	1545.806885	12 1/8	1782.564453	12 11/16	2042.340576	13 1/4	2326.203125
11 5/8	1571.009766	12 3/16	1810.272217	12 3/4	2072.671875	13 5/16	2359.276611
11 11/16	1596.485107	12 1/4	1838.265625	12 13/16	2103.302002	13 3/8	2392.662109
11 3/4	1622.234375	12 5/16	1866.546143	12 7/8	2134.232422	13 7/16	2426.361084
11 13/16	1648.259033	12 3/8	1895.115234	12 15/16	2165.464600	13 1/2	2460.375000

PART III.

SPRING TABLES.

Helical Wire.

LIGHT STEEL SPRING TABLE.

Weight per inch of solid height equals $A \times d^2$. Capacity of coil equals $B \times d^2$, where d is the diameter of bar in inches.

$\frac{D}{d}$	Length per Inch of Solid Height.	Weight per Inch of Solid Height. A.	Free Height per Inch of Solid Height.	Capacity. B.
3	9.4248	2.0973	1.1795	10,472
$3\frac{1}{16}$	9.6212	2.1410	1.1871	10,258
$3\frac{1}{8}$	9.8175	2.1847	1.1948	10,053
$3\frac{3}{16}$	10.0138	2.2284	1.2027	9,856
$3\frac{1}{4}$	10.2102	2.2721	1.2107	9,666
$3\frac{5}{16}$	10.4066	2.3158	1.2189	9,484
$3\frac{3}{8}$	10.6029	2.3595	1.2272	9,308
$3\frac{7}{16}$	10.7992	2.4031	1.2357	9,139
$3\frac{1}{2}$	10.9956	2.4468	1.2443	8,976
$3\frac{9}{16}$	11.1920	2.4905	1.2531	8,819
$3\frac{5}{8}$	11.3883	2.5342	1.2621	8,666
$3\frac{11}{16}$	11.5846	2.5779	1.2712	8,520
$3\frac{3}{4}$	11.7810	2.6216	1.2805	8,378
$3\frac{13}{16}$	11.9774	2.6653	1.2899	8,240
$3\frac{7}{8}$	12.1737	2.7090	1.2995	8,107
$3\frac{15}{16}$	12.3700	2.7527	1.3092	7,979
4	12.5664	2.7964	1.3191	7,854
$4\frac{1}{16}$	12.7628	2.8401	1.3292	7,733
$4\frac{1}{8}$	12 9591	2.8838	1.3394	7,616
$4\frac{3}{16}$	13.1554	2.9275	1.3498	7,502
$4\frac{1}{4}$	13.3518	2.9712	1.3603	7,392
$4\frac{5}{16}$	13.5482	3.0149	1.3709	7,285
$4\frac{3}{8}$	13.7445	3.0586	1.3818	7,181
$4\frac{7}{16}$	13.9408	3.1022	1.3928	7,080
$4\frac{1}{2}$	14.1372	3.1459	1.4039	6,981
$4\frac{9}{16}$	14.3336	3.1896	1.4152	6,886
$4\frac{5}{8}$	14.5299	3.2333	1.4267	6,793
$4\frac{11}{16}$	14.7262	3.2770	1.4383	6,702
$4\frac{3}{4}$	14.9226	3.3207	1.4500	6,614
$4\frac{13}{16}$	15.1190	3.3644	1.4620	6,528
$4\frac{7}{8}$	15.3153	3.4081	1.4740	6,444
$4\frac{15}{16}$	15.5116	3.4518	1.4863	6,363
5	15.7080	3.4955	1.4987	6,283
$5\frac{1}{16}$	15.9044	3.5392	1.5112	6,206
$5\frac{1}{8}$	16.1007	3.5829	1.5239	6,130
$5\frac{3}{16}$	16.2970	3.6266	1.5367	6,056
$5\frac{1}{4}$	16.4934	3.6703	1.5498	5,984
$5\frac{5}{16}$	16.6898	3.7140	1.5629	5,916
$5\frac{3}{8}$	16.8861	3.7576	1.5763	5,845
$5\frac{7}{16}$	17.0824	3.8013	1.5897	5,748

Helical Wire. — *Continued.*

LIGHT STEEL SPRING TABLE.

$\frac{D}{d}$.	Length per Inch of Solid Height.	Weight per Inch of Solid Height. *A.*	Free Height per Inch of Solid Height.	Capacity. *B.*
$5\frac{1}{2}$	17.2788	3.8450	1.6034	5712
$5\frac{9}{16}$	17.4752	3.8887	1.6171	5648
$5\frac{5}{8}$	17.6715	3.9324	1.6311	5585
$5\frac{11}{16}$	17.8678	3.9761	1.6452	5524
$5\frac{3}{4}$	18.0642	4.0198	1.6595	5464
$5\frac{13}{16}$	18.2606	4.0635	1.6739	5405
$5\frac{7}{8}$	18.4569	4.1072	1.6884	5347
$5\frac{15}{16}$	18.6532	4.1509	1.7032	5291
6	18.8496	4.1946	1.7187	5236
$6\frac{1}{16}$	19.0460	4.2383	1.7331	5182
6	19.2423	4.2820	1.7483	5129
$6\frac{3}{16}$	19.4386	4.3257	1.7636	5077
$6\frac{1}{4}$	19.6350	4.3694	1.7791	5027
$6\frac{5}{16}$	19.8314	4.4131	1.7948	4977
$6\frac{3}{8}$	20.0277	4.4567	1.8106	4928
$6\frac{7}{16}$	20.2240	4.5004	1.8266	4880
$6\frac{1}{2}$	20.4204	4.5441	1.8427	4833
$6\frac{9}{16}$	20.6168	4.5878	1.8590	4787
$6\frac{5}{8}$	20.8131	4.6315	1.8754	4742
$6\frac{11}{16}$	21.0094	4.6752	1.8920	4698
$6\frac{3}{4}$	21.2058	4.7189	1.9088	4654
$6\frac{13}{16}$	21.4022	4.7626	1.9257	4612
$6\frac{7}{8}$	21.5985	4.8063	1.9428	4570
$6\frac{15}{16}$	21.7948	4.8500	1.9600	4528
7	21.9912	4.8937	1.9774	4488
$7\frac{1}{16}$	22.1876	4.9374	1.9949	4448
$7\frac{1}{8}$	22.3839	4.9811	2.0126	4409
$7\frac{3}{16}$	22.5802	5.0248	2.0304	4371
$7\frac{1}{4}$	22.7766	5.0685	2.0484	4333
$7\frac{5}{16}$	22.9730	5.1122	2.0666	4296
$7\frac{3}{8}$	23.1693	5.1558	2.0849	4260
$7\frac{7}{16}$	23.3656	5.1995	2.1033	4224
$7\frac{1}{2}$	23.5620	5.2432	2.1220	4189
$7\frac{9}{16}$	23.7584	5.2869	2.1407	4154
$7\frac{5}{8}$	23.9547	5.3306	2.1597	4120
$7\frac{11}{16}$	24.1510	5.3743	2.1788	4087
$7\frac{3}{4}$	24.3474	5.4180	2.1980	4054
$7\frac{13}{16}$	24.5438	5.4617	2.2174	4021
$7\frac{7}{8}$	24.7401	5.5054	2.2370	3938
$7\frac{15}{16}$	24.9364	5.5491	2.2567	3958
8	25.1328	5.5928	2.2765	3927
$8\frac{1}{16}$	25.3292	5.6365	2.2966	3897
$8\frac{1}{8}$	25.5255	5.6802	2.3167	3867

Helical Wire. — *Continued.*

LIGHT STEEL SPRING TABLE.

$\frac{D}{d}$.	Length per Inch of Solid Height.	Weight per Inch of Solid Height. *A*	Free Height per Inch of Solid Height.	Capacity. *B*
$8\frac{3}{16}$	25.7218	5.7239	2.3371	3837
$8\frac{1}{4}$	25.9182	5.7676	2.3576	3808
$8\frac{5}{16}$	26.1146	5.8112	2.3782	3779
$8\frac{3}{8}$	26.3109	5.8549	2.3990	3751
$8\frac{7}{16}$	26.5072	5.8986	2.4200	3723
$8\frac{1}{2}$	26.7036	5.9423	2.4411	3696
$8\frac{9}{16}$	26.9000	5.9860	2.4624	3669
$8\frac{5}{8}$	27.0963	6.0297	2.4838	3642
$8\frac{11}{16}$	27.2926	6.0734	2.5054	3616
$8\frac{3}{4}$	27.4890	6.1171	2.5271	3590
$8\frac{13}{16}$	27.6854	6.1608	2.5490	3565
$8\frac{7}{8}$	27.8817	6.2045	2.5711	3540
$8\frac{15}{16}$	28.0780	6.2482	2.5933	3515
9	28.2744	6.2919	2.6156	3491

Helical Bar.

MACHINERY AND RAILROAD. — HEAVY STEEL SPRING TABLE.

Diameter of Bar $\frac{1}{16}$".

Outside Diameter.	Inside Diameter.	Length per Inch of Solid Height.	Weight per Inch of Solid Height.	Free Height per Inch of Solid Height.	Capacity.
$\frac{1}{4}$	$\frac{1}{8}$	9.4248	.0082	1.1795	41
$\frac{5}{16}$	$\frac{3}{16}$	12.5664	.0109	1.3191	31
$\frac{3}{8}$	$\frac{1}{4}$	15.7080	.0137	1.4987	25
$\frac{7}{16}$	$\frac{5}{16}$	18.8496	.0164	1.7181	20
$\frac{1}{2}$	$\frac{3}{8}$	21.9912	.0191	1.9773	17.5
$\frac{9}{16}$	$\frac{7}{16}$	25.1328	.0218	2.2765	15.3
$\frac{5}{8}$	$\frac{1}{2}$	28.2744	.0246	2.6156	13.6
$\frac{11}{16}$	$\frac{9}{16}$	31.4160	.0273	2.9946	12.2
$\frac{3}{4}$	$\frac{5}{8}$	34.5576	.0300	3.4135	11.2
$\frac{13}{16}$	$\frac{11}{16}$	37.6992	.0328	3.8722	10.2
$\frac{7}{8}$	$\frac{3}{4}$	40.8408	.0355	4.3709	9.4
$\frac{15}{16}$	$\frac{13}{16}$	43.9824	.0382	4.9094	8.8
1	$\frac{7}{8}$	47.1240	.0410	5.4879	8.2

Diameter of Bar $\frac{1}{8}$".

$\frac{1}{2}$	$\frac{1}{4}$	9.4248	.0328	1.1795	164
$\frac{9}{16}$	$\frac{5}{16}$	10.9956	.0382	1.2443	140
$\frac{5}{8}$	$\frac{3}{8}$	12.5664	.0437	1.3191	123
$\frac{11}{16}$	$\frac{7}{16}$	14.1372	.0492	1.4039	109
$\frac{3}{4}$	$\frac{1}{2}$	15.7080	.0546	1.4987	98
$\frac{13}{16}$	$\frac{9}{16}$	17.2788	.0601	1.6034	89
$\frac{7}{8}$	$\frac{5}{8}$	18.8496	.0655	1.7181	82
$\frac{15}{16}$	$\frac{11}{16}$	20.4204	.0710	1.8427	76
1	$\frac{3}{4}$	21.9912	.0765	1.9774	70
$1\frac{1}{16}$	$\frac{13}{16}$	23.5620	.0819	2.1220	65
$1\frac{1}{8}$	$\frac{7}{8}$	25.1328	.0874	2.2765	61
$1\frac{3}{16}$	$\frac{15}{16}$	26.7036	.0928	2.4411	58
$1\frac{1}{4}$	1	28.2744	.0983	2.6156	56

Diameter of Bar $\frac{3}{16}$".

$\frac{3}{4}$	$\frac{3}{8}$	9.4248	.0737	1.1795	368
$\frac{13}{16}$	$\frac{7}{16}$	10.4720	.0819	1.2216	331
$\frac{7}{8}$	$\frac{1}{2}$	11.5192	.0901	1.2682	301
$\frac{15}{16}$	$\frac{9}{16}$	12.5664	.0983	1.3191	276
1	$\frac{5}{8}$	13.6136	.1065	1.3745	255
$1\frac{1}{16}$	$\frac{11}{16}$	14.6608	.1147	1.4344	237
$1\frac{1}{4}$	$\frac{3}{4}$	15.7080	.1229	1.4986	221

Helical Bar.

MACHINERY AND RAILROAD. — HEAVY STEEL SPRING TABLE.

Diameter of Bar $\frac{3}{16}$". — Continued.

Outside Diameter.	Inside Diameter.	Length per Inch of Solid Height.	Weight per Inch of Solid Height.	Free Height per Inch of Solid Height.	Capacity.
$1\frac{3}{16}$	$\frac{13}{16}$	16.7552	.1311	1.5673	207
$1\frac{1}{4}$	$\frac{7}{8}$	17.8024	.1393	1.6405	195
$1\frac{5}{16}$	$\frac{15}{16}$	18.8496	.1475	1.7180	184
$1\frac{3}{8}$	1	19.8968	.1557	1.8000	174
$1\frac{7}{16}$	$1\frac{1}{16}$	20.9440	.1639	1.8865	166
$1\frac{1}{2}$	$1\frac{1}{8}$	21.9912	.1720	1.9773	158
$1\frac{9}{16}$	$1\frac{3}{16}$	23.0384	.1802	2.0726	151
$1\frac{5}{8}$	$1\frac{1}{4}$	24.0856	.1884	2.1724	144
$1\frac{11}{16}$	$1\frac{5}{16}$	25.1328	.1966	2.2765	138
$1\frac{3}{4}$	$1\frac{3}{8}$	26.1800	.2048	2.3851	133
$1\frac{13}{16}$	$1\frac{7}{16}$	27.2272	.2130	2.4982	127
$1\frac{7}{8}$	$1\frac{1}{2}$	28.2744	.2212	2.6156	123

Diameter of Bar $\frac{1}{4}$".

1	$\frac{1}{2}$	9.4248	.1311	1.1795	654
$1\frac{1}{16}$	$\frac{9}{16}$	10.2102	.1420	1.2107	604
$1\frac{1}{8}$	$\frac{5}{8}$	10.9956	.1529	1.2443	561
$1\frac{3}{16}$	$\frac{11}{16}$	11.7810	.1639	1.2805	524
$1\frac{1}{4}$	$\frac{3}{4}$	12.5664	.1748	1.3191	491
$1\frac{5}{16}$	$\frac{13}{16}$	13.3518	.1857	1.3603	462
$1\frac{3}{8}$	$\frac{7}{8}$	14.1372	.1966	1.4039	436
$1\frac{7}{16}$	$\frac{15}{16}$	14.9226	.2075	1.4500	413
$1\frac{1}{2}$	1	15.7080	.2185	1.4986	393
$1\frac{9}{16}$	$1\frac{1}{16}$	16.4934	.2294	1.5498	374
$1\frac{5}{8}$	$1\frac{1}{8}$	17.2788	.2403	1.6034	357
$1\frac{11}{16}$	$1\frac{3}{16}$	18.0642	.2512	1.6595	341
$1\frac{3}{4}$	$1\frac{1}{4}$	18.8496	.2622	1.7181	327
$1\frac{13}{16}$	$1\frac{5}{16}$	19.6350	.2731	1.7791	314
$1\frac{7}{8}$	$1\frac{3}{8}$	20.4204	.2840	1.8427	302
$1\frac{15}{16}$	$1\frac{7}{16}$	21.2058	.2949	1.9088	291
2	$1\frac{1}{2}$	21.9912	.3059	1.9774	281
$2\frac{1}{16}$	$1\frac{9}{16}$	22.7766	.3168	2.0484	271
$2\frac{1}{8}$	$1\frac{5}{8}$	23.5620	.3277	2.1220	262
$2\frac{3}{16}$	$1\frac{11}{16}$	24.3474	.3386	2.1980	253
$2\frac{1}{4}$	$1\frac{3}{4}$	25.1328	.3495	2.2765	245
$2\frac{5}{16}$	$1\frac{13}{16}$	25.9182	.3605	2.3576	238
$2\frac{3}{8}$	$1\frac{7}{8}$	26.7036	.3714	2.4411	231
$2\frac{7}{16}$	$1\frac{15}{16}$	27.4890	.3823	2.5271	224
$2\frac{1}{2}$	2	28.2744	.3932	2.6156	218

Helical Bar.

MACHINERY AND RAILROAD. — HEAVY STEEL SPRING TABLE.

Diameter of Bar $\frac{5}{16}$".

Outside Diameter.	Inside Diameter.	Length per Inch of Solid Height.	Weight per Inch of Solid Height.	Free Height per Inch of Solid Height.	Capacity.
$1\frac{1}{4}$	$\frac{5}{8}$	9.4248	.2048	1.1795	1023
$1\frac{5}{16}$	$\frac{11}{16}$	10.0531	.2185	1.2042	959
$1\frac{3}{8}$	$\frac{3}{4}$	10.6814	.2321	1.2306	902
$1\frac{7}{16}$	$\frac{13}{16}$	11.3098	.2458	1.2585	852
$1\frac{1}{2}$	$\frac{7}{8}$	11.9381	.2594	1.2880	807
$1\frac{9}{16}$	$\frac{15}{16}$	12.5664	.2731	1.3191	767
$1\frac{5}{8}$	1	13.1947	.2867	1.3518	730
$1\frac{11}{16}$	$1\frac{1}{16}$	13.8230	.3004	1.3862	697
$1\frac{3}{4}$	$1\frac{1}{8}$	14.4514	.3140	1.4221	667
$1\frac{13}{16}$	$1\frac{3}{16}$	15.0797	.3277	1.4596	639
$1\frac{7}{8}$	$1\frac{1}{4}$	15.7080	.3414	1.4987	614
$1\frac{15}{16}$	$1\frac{5}{16}$	16.3363	.3550	1.5393	590
2	$1\frac{3}{8}$	16.9646	.3687	1.5816	568
$2\frac{1}{16}$	$1\frac{7}{16}$	17.5930	.3823	1.6255	548
$2\frac{1}{8}$	$1\frac{1}{2}$	18.2213	.3960	1.6710	529
$2\frac{3}{16}$	$1\frac{9}{16}$	18.8496	.4096	1.7181	511
$2\frac{1}{4}$	$1\frac{5}{8}$	19.4779	.4233	1.7667	495
$2\frac{5}{16}$	$1\frac{11}{16}$	20.1062	.4369	1.8170	479
$2\frac{3}{8}$	$1\frac{3}{4}$	20.7346	.4506	1.8688	465
$2\frac{7}{16}$	$1\frac{13}{16}$	21.3629	.4642	1.9223	450
$2\frac{1}{2}$	$1\frac{7}{8}$	21.9012	.4779	1.9774	438
$2\frac{9}{16}$	$1\frac{15}{16}$	22.6195	.4916	2.0340	426
$2\frac{5}{8}$	2	23.2478	.5052	2.0922	415
$2\frac{11}{16}$	$2\frac{1}{16}$	23.8762	.5189	2.1521	404
$2\frac{3}{4}$	$2\frac{1}{8}$	24.5045	.5325	2.2135	393
$2\frac{13}{16}$	$2\frac{3}{16}$	25.1328	.5462	2.2765	383
$2\frac{7}{8}$	$2\frac{1}{4}$	25.7611	.5598	2.3412	374
$2\frac{15}{16}$	$2\frac{5}{16}$	26.3894	.5735	2.4074	365
3	$2\frac{3}{8}$	27.0178	.5871	2.4752	357
$3\frac{1}{16}$	$2\frac{7}{16}$	27.6461	.6008	2.5446	349
$3\frac{1}{8}$	$2\frac{1}{2}$	28.2744	.6144	2.6156	341

Helical Bar.

MACHINERY AND RAILROAD. — HEAVY STEEL SPRING TABLE.

Diameter of Bar $\frac{1}{2}$".

Outside Diameter.	Inside Diameter.	Length per Inch of Solid Height.	Weight per Inch of Solid Height.	Free Height per Inch of Solid Height.	Capacity.
$1\frac{1}{2}$	$\frac{1}{2}$	9.4248	.2949	1.1795	1473
$1\frac{9}{16}$	$\frac{13}{16}$	9.9484	.3113	1.2000	1395
$1\frac{5}{8}$	$\frac{7}{8}$	10.4720	.3277	1.2216	1325
$1\frac{11}{16}$	$\frac{15}{16}$	10.9956	.3441	1.2443	1262
$1\frac{3}{4}$	1	11.5192	.3605	1.2682	1205
$1\frac{13}{16}$	$1\frac{1}{16}$	12.0428	.3769	1.2931	1152
$1\frac{7}{8}$	$1\frac{1}{8}$	12.5664	.3932	1.3191	1104
$1\frac{15}{16}$	$1\frac{3}{16}$	13.0900	.4096	1.3463	1060
2	$1\frac{1}{4}$	13.6136	.4260	1.3745	1020
$2\frac{1}{16}$	$1\frac{5}{16}$	14.1372	.4424	1.4039	982
$2\frac{1}{8}$	$1\frac{3}{8}$	14.6608	.4588	1.4344	947
$2\frac{3}{16}$	$1\frac{7}{16}$	15.1844	.4752	1.4660	914
$2\frac{1}{4}$	$1\frac{1}{2}$	15.7080	.4916	1.4987	884
$2\frac{5}{16}$	$1\frac{9}{16}$	16.2316	.5079	1.5324	855
$2\frac{3}{8}$	$1\frac{5}{8}$	16.7552	.5243	1.5674	828
$2\frac{7}{16}$	$1\frac{11}{16}$	17.2788	.5407	1.6034	803
$2\frac{1}{2}$	$1\frac{3}{4}$	17.8024	.5571	1.6405	780
$2\frac{9}{16}$	$1\frac{13}{16}$	18.3260	.5735	1.6787	757
$2\frac{5}{8}$	$1\frac{7}{8}$	18.8496	.5899	1.7181	736
$2\frac{11}{16}$	$1\frac{15}{16}$	19.3732	.6062	1.7585	716
$2\frac{3}{4}$	2	19.8968	.6226	1.8001	698
$2\frac{13}{16}$	$2\frac{1}{16}$	20.4204	.6390	1.8427	680
$2\frac{7}{8}$	$2\frac{1}{8}$	20.9440	.6554	1.8865	663
$2\frac{15}{16}$	$2\frac{3}{16}$	21.4676	.6718	1.9314	647
3	$2\frac{1}{4}$	21.9912	.6882	1.9774	631
$3\frac{1}{16}$	$2\frac{5}{16}$	22.5148	.7046	2.0244	616
$3\frac{1}{8}$	$2\frac{3}{8}$	23.0384	.7209	2.0727	602
$3\frac{3}{16}$	$2\frac{7}{16}$	23.5320	.7373	2.1220	589
$3\frac{1}{4}$	$2\frac{1}{2}$	24.0856	.7537	2.1724	576
$3\frac{5}{16}$	$2\frac{9}{16}$	24.6092	.7701	2.2239	564
$3\frac{3}{8}$	$2\frac{5}{8}$	25.1328	.7865	2.2765	552
$3\frac{7}{16}$	$2\frac{11}{16}$	25.6564	.8029	2.3303	541
$3\frac{1}{2}$	$2\frac{3}{4}$	26.1800	.8193	2.3851	530
$3\frac{9}{16}$	$2\frac{13}{16}$	26.7036	.8356	2.4411	520
$3\frac{5}{8}$	$2\frac{7}{8}$	27.2272	.8520	2.4982	510
$3\frac{11}{16}$	$2\frac{15}{16}$	27.7508	.8684	2.5563	500
$3\frac{3}{4}$	3	28.2744	.8848	2.6156	491

Helical Bar.

MACHINERY AND RAILROAD. — HEAVY STEEL SPRING TABLE.

Diameter of Bar $\frac{1}{16}$".

Outside Diameter.	Inside Diameter.	Length per Inch of Solid Height.	Weight per Inch of Solid Height.	Free Height per Inch of Solid Height.	Capacity.
$1\frac{1}{4}$	$\frac{7}{8}$	9.4248	.4014	1.1795	2000
$1\frac{13}{16}$	$\frac{15}{16}$	9.8736	.4206	1.1970	1913
$1\frac{7}{8}$	1	10.3224	.4397	1.2153	1830
$1\frac{15}{16}$	$1\frac{1}{16}$	10.7712	.4588	1.2345	1754
2	$1\frac{1}{8}$	11.2200	.4779	1.2544	1684
$2\frac{1}{16}$	$1\frac{3}{16}$	11.6688	.4970	1.2752	1619
$2\frac{1}{8}$	$1\frac{1}{4}$	12.1176	.5161	1.2967	1559
$2\frac{3}{16}$	$1\frac{5}{16}$	12.5664	.5352	1.3191	1503
$2\frac{1}{4}$	$1\frac{3}{8}$	13.0152	.5544	1.3423	1451
$2\frac{5}{16}$	$1\frac{7}{16}$	13.4640	.5735	1.3664	1403
$2\frac{3}{8}$	$1\frac{1}{2}$	13.9128	.5926	1.3912	1358
$2\frac{7}{16}$	$1\frac{9}{16}$	14.3616	.6107	1.4168	1315
$2\frac{1}{2}$	$1\frac{5}{8}$	14.8104	.6308	1.4433	1276
$2\frac{9}{16}$	$1\frac{11}{16}$	15.2592	.6499	1.4706	1238
$2\frac{5}{8}$	$1\frac{3}{4}$	15.7080	.6691	1.4986	1203
$2\frac{11}{16}$	$1\frac{13}{16}$	16.1568	.6882	1.5276	1169
$2\frac{3}{4}$	$1\frac{7}{8}$	16.6056	.7073	1.5573	1138
$2\frac{13}{16}$	$1\frac{15}{16}$	17.0544	.7264	1.5878	1108
$2\frac{7}{8}$	2	17.5032	.7455	1.6191	1079
$2\frac{15}{16}$	$2\frac{1}{16}$	17.9520	.7646	1.6513	1052
3	$2\frac{1}{8}$	18.4008	.7838	1.6843	1027
$3\frac{1}{16}$	$2\frac{3}{16}$	18.8496	.8029	1.7181	1002
$3\frac{1}{8}$	$2\frac{1}{4}$	19.2984	.8220	1.7527	978
$3\frac{3}{16}$	$2\frac{5}{16}$	19.7472	.8411	1.7881	957
$3\frac{1}{4}$	$2\frac{3}{8}$	20.1960	.8602	1.8243	935
$3\frac{5}{16}$	$2\frac{7}{16}$	20.6448	.8793	1.8613	915
$3\frac{3}{8}$	$2\frac{1}{2}$	21.0936	.8984	1.8992	896
$3\frac{7}{16}$	$2\frac{9}{16}$	21.5424	.9176	1.9379	877
$3\frac{1}{2}$	$2\frac{5}{8}$	21.9912	.9367	1.9774	859
$3\frac{9}{16}$	$2\frac{11}{16}$	22.4400	.9558	2.0177	842
$3\frac{5}{8}$	$2\frac{3}{4}$	22.8888	.9749	2.0588	825
$3\frac{11}{16}$	$2\frac{13}{16}$	23.3376	.9940	2.1007	809
$3\frac{3}{4}$	$2\frac{7}{8}$	23.7864	1.0131	2.1434	794
$3\frac{13}{16}$	$2\frac{15}{16}$	24.2352	1.0323	2.1870	779
$3\frac{7}{8}$	3	24.6840	1.0514	2.2314	765
$3\frac{15}{16}$	$3\frac{1}{16}$	25.1328	1.0705	2.2765	752
4	$3\frac{1}{8}$	25.5816	1.0896	2.3225	738
$4\frac{1}{16}$	$3\frac{3}{16}$	26.0304	1.1087	2.3694	726
$4\frac{1}{8}$	$3\frac{1}{4}$	26.4792	1.1278	2.4170	713
$4\frac{3}{16}$	$3\frac{5}{16}$	26.9280	1.1470	2.4654	702
$4\frac{1}{4}$	$3\frac{3}{8}$	27.3768	1.1661	2.5147	690
$4\frac{5}{16}$	$3\frac{7}{16}$	27.8256	1.1852	2.5647	679
$4\frac{3}{8}$	$3\frac{1}{2}$	28.2744	1.2043	2.6156	668

Helical Bar.

MACHINERY AND RAILROAD. — HEAVY STEEL SPRING TABLE.

Diameter of Bar ½".

Outside Diameter.	Inside Diameter.	Length per Inch of Solid Height.	Weight per Inch of Solid Height.	Free Height per Inch of Solid Height.	Capacity.
2	1	9.4248	.5243	1.1795	2618
2 1/16	1 1/16	9.8175	.5462	1.1948	2513
2 1/8	1 1/8	10.2102	.5680	1.2107	2417
2 3/16	1 3/16	10.6029	.5899	1.2272	2327
2 1/4	1 1/4	10.9956	.6117	1.2443	2244
2 5/16	1 5/16	11.3883	.6336	1.2621	2167
2 3/8	1 3/8	11.7810	.6554	1.2805	2094
2 7/16	1 7/16	12.1737	.6773	1.2995	2027
2 1/2	1 1/2	12.5664	.6991	1.3191	1964
2 9/16	1 9/16	12.9591	.7209	1.3394	1904
2 5/8	1 5/8	13.3518	.7428	1.3603	1848
2 11/16	1 11/16	13.7445	.7646	1.3818	1795
2 3/4	1 3/4	14.1372	.7865	1.4039	1745
2 13/16	1 13/16	14.5299	.8083	1.4267	1698
2 7/8	1 7/8	14.9226	.8302	1.4500	1653
2 15/16	1 15/16	15.3153	.8520	1.4740	1611
3	2	15.7080	.8739	1.4986	1571
3 1/16	2 1/16	16.1007	.8957	1.5239	1532
3 1/8	2 1/8	16.4934	.9176	1.5498	1496
3 3/16	2 3/16	16.8861	.9394	1.5763	1461
3 1/4	2 1/4	17.2788	.9613	1.6034	1428
3 5/16	2 5/16	17.6715	.9831	1.6311	1396
3 3/8	2 3/8	18.0642	1.0050	1.6595	1366
3 7/16	2 7/16	18.4569	1.0268	1.6884	1337
3 1/2	2 1/2	18.8496	1.0486	1.7181	1309
3 9/16	2 9/16	19.2423	1.0705	1.7483	1282
3 5/8	2 5/8	19.6350	1.0923	1.7791	1257
3 11/16	2 11/16	20.0277	1.1142	1.8106	1232
3 3/4	2 3/4	20.4204	1.1360	1.8427	1208
3 13/16	2 13/16	20.8131	1.1579	1.8754	1186
3 7/8	2 7/8	21.2058	1.1797	1.9088	1164
3 15/16	2 15/16	21.5985	1.2016	1.9428	1143
4	3	21.9912	1.2234	1.9774	1122
4 1/16	3 1/16	22.3839	1.2453	2.0126	1102
4 1/8	3 1/8	22.7766	1.2671	2.0484	1083
4 3/16	3 3/16	23.1693	1.2890	2.0849	1065
4 1/4	3 1/4	23.5620	1.3108	2.1220	1047
4 5/16	3 5/16	23.9547	1.3327	2.1597	1030
4 3/8	3 3/8	24.3474	1.3545	2.1980	1013
4 7/16	3 7/16	24.7401	1.3763	2.2370	997

Helical Bar.

MACHINERY AND RAILROAD. — HEAVY STEEL SPRING TABLE.

Diameter of Bar ½". — Continued.

Outside Diameter.	Inside Diameter.	Length per Inch of Solid Height.	Weight per Inch of Solid Height.	Free Height per Inch of Solid Height.	Capacity.
4½	3½	25.1328	1.3982	2.2765	982
4 9/16	3 9/16	25.5255	1.4200	2.3167	967
4⅝	3⅝	25.9182	1.4419	2.3576	952
4 11/16	3 11/16	26.3109	1.4637	2.3990	938
4¾	3¾	26.7036	1.4856	2.4411	924
4 13/16	3 13/16	27.0963	1.5074	2.4838	911
4⅞	3⅞	27.4890	1.5293	2.5271	898
4 15/16	3 15/16	27.8817	1.5511	2.5711	885
5	4	28.2744	1.5730	2.6156	873

Diameter of Bar 5/16".

2¼	1⅛	9.4248	.6636	1.1795	3313
2 5/16	1 3/16	9.7739	.6882	1.1931	3195
2⅜	1¼	10.1229	.7128	1.2071	3085
2 7/16	1 5/16	10.4720	.7373	1.2216	2982
2½	1⅜	10.8211	.7619	1.2366	2886
2 9/16	1 7/16	11.1701	.7865	1.2522	2796
2⅝	1½	11.5192	.8111	1.2682	2711
2 11/16	1 9/16	11.8683	.8356	1.2847	2631
2¾	1⅝	12.2173	.8602	1.3017	2556
2 13/16	1 11/16	12.5664	.8848	1.3191	2485
2⅞	1¾	12.9155	.9094	1.3371	2418
2 15/16	1 13/16	13.2645	.9340	1.3556	2354
3	1⅞	13.6136	.9585	1.3745	2294
3 1/16	1 15/16	13.9627	.9831	1.3940	2237
3⅛	2	14.3117	1.0077	1.4139	2182
3 3/16	2 1/16	14.6608	1.0323	1.4344	2130
3¼	2⅛	15.0099	1.0568	1.4553	2081
3 5/16	2 3/16	15.3589	1.0814	1.4767	2033
3⅜	2¼	15.7080	1.1060	1.4987	1988
3 7/16	2 5/16	16.0571	1.1306	1.5211	1945
3½	2⅜	16.4061	1.1551	1.5440	1903
3 9/16	2 7/16	16.7552	1.1797	1.5674	1864
3⅝	2½	17.1043	1.2043	1.5912	1826
3 11/16	2 9/16	17.4533	1.2289	1.6156	1789
3¾	2⅝	17.8024	1.2535	1.6405	1754

Helical Bar.

MACHINERY AND RAILROAD. — HEAVY STEEL SPRING TABLE.

Diameter of Bar $\frac{5}{16}$". — Continued.

Outside Diameter.	Inside Diameter.	Length per Inch of Solid Height.	Weight per Inch of Solid Height.	Free Height per Inch of Solid Height.	Capacity.
$3\frac{13}{16}$	$2\frac{11}{16}$	18.1515	1.2780	1.6659	1720
$3\frac{7}{8}$	$2\frac{3}{4}$	18.5005	1.3026	1.6917	1688
$3\frac{15}{16}$	$2\frac{13}{16}$	18.8496	1.3272	1.7181	1657
4	$2\frac{7}{8}$	19.1987	1.3518	1.7449	1627
$4\frac{1}{16}$	$2\frac{15}{16}$	19.5477	1.3763	1.7722	1598
$4\frac{1}{8}$	3	19.8968	1.4009	1.8001	1570
$4\frac{3}{16}$	$3\frac{1}{16}$	20.2459	1.4255	1.8284	1542
$4\frac{1}{4}$	$3\frac{1}{8}$	20.5949	1.4501	1.8572	1516
$4\frac{5}{16}$	$3\frac{3}{16}$	20.9440	1.4747	1.8865	1491
$4\frac{3}{8}$	$3\frac{1}{4}$	21.2931	1.4992	1.9163	1467
$4\frac{7}{16}$	$3\frac{5}{16}$	21.6421	1.5238	1.9466	1443
$4\frac{1}{2}$	$3\frac{3}{8}$	21.9912	1.5484	1.9774	1420
$4\frac{9}{16}$	$3\frac{7}{16}$	22.3403	1.5730	2.0086	1398
$4\frac{5}{8}$	$3\frac{1}{2}$	22.6893	1.5975	2.0404	1376
$4\frac{11}{16}$	$3\frac{9}{16}$	23.0384	1.6221	2.0727	1355
$4\frac{3}{4}$	$3\frac{5}{8}$	23.3875	1.6467	2.1054	1335
$4\frac{13}{16}$	$3\frac{11}{16}$	23.7365	1.6713	2.1386	1317
$4\frac{7}{8}$	$3\frac{3}{4}$	24.0856	1.6959	2.1724	1297
$4\frac{15}{16}$	$3\frac{13}{16}$	24.4347	1.7204	2.2066	1278
5	$3\frac{7}{8}$	24.7837	1.7450	2.2413	1260
$5\frac{1}{16}$	$3\frac{15}{16}$	25.1328	1.7696	2.2765	1243
$5\frac{1}{8}$	4	25.4819	1.7942	2.3123	1226
$5\frac{3}{16}$	$4\frac{1}{16}$	25.8309	1.8187	2.3484	1209
$5\frac{1}{4}$	$4\frac{1}{8}$	26.1800	1.8433	2.3851	1193
$5\frac{5}{16}$	$4\frac{3}{16}$	26.5291	1.8679	2.4223	1177
$5\frac{3}{8}$	$4\frac{1}{4}$	26.8781	1.8925	2.4600	1162
$5\frac{7}{16}$	$4\frac{5}{16}$	27.2272	1.9171	2.2982	1147
$5\frac{1}{2}$	$4\frac{3}{8}$	27.5763	1.9416	2.5368	1132
$5\frac{9}{16}$	$4\frac{7}{16}$	27.9253	1.9662	2.5760	1118
$5\frac{5}{8}$	$4\frac{1}{2}$	28.2744	1.9908	2.6156	1104

Diameter of Bar $\frac{5}{8}$".

$2\frac{1}{2}$	$1\frac{1}{4}$	9.4248	.8193	1.1795	4091
$2\frac{9}{16}$	$1\frac{5}{16}$	9.7390	.8466	1.1917	3959
$2\frac{5}{8}$	$1\frac{3}{8}$	10.0531	.8739	1.2042	3835
$2\frac{11}{16}$	$1\frac{7}{16}$	10.3673	.9012	1.2172	3719
$2\frac{3}{4}$	$1\frac{1}{2}$	10.6814	.9285	1.2306	3609

Helical Bar.

MACHINERY AND RAILROAD. — HEAVY STEEL SPRING TABLE.

Diameter of Bar $\frac{5}{8}$". — Continued.

Outside Diameter.	Inside Diameter.	Length per Inch of Solid Height.	Weight per Inch of Solid Height.	Free Height per Inch of Solid Height.	Capacity.
$2\frac{13}{16}$	$1\frac{9}{16}$	10.9956	.9558	1.2443	3506
$2\frac{7}{8}$	$1\frac{5}{8}$	11.3098	.9831	1.2585	3409
$2\frac{15}{16}$	$1\frac{11}{16}$	11.6239	1.0104	1.2731	3317
3	$1\frac{3}{4}$	11.9381	1.0377	1.2880	3229
$3\frac{1}{16}$	$1\frac{13}{16}$	12.2522	1.0650	1.3034	3147
$3\frac{1}{8}$	$1\frac{7}{8}$	12.5664	1.0923	1.3191	3068
$3\frac{3}{16}$	$1\frac{15}{16}$	12.8806	1.1196	1.3353	2993
$3\frac{1}{4}$	2	13.1947	1.1470	1.3518	2922
$3\frac{5}{16}$	$2\frac{1}{16}$	13.5089	1.1743	1.3688	2854
$3\frac{3}{8}$	$2\frac{1}{8}$	13.8230	1.2016	1.3862	2789
$3\frac{7}{16}$	$2\frac{3}{16}$	14.1372	1.2289	1.4039	2727
$3\frac{1}{2}$	$2\frac{1}{4}$	14.4514	1.2562	1.4221	2668
$3\frac{9}{16}$	$2\frac{5}{16}$	14.7655	1.2835	1.4406	2611
$3\frac{5}{8}$	$2\frac{3}{8}$	15.0797	1.3108	1.4596	2557
$3\frac{11}{16}$	$2\frac{7}{16}$	15.3938	1.3381	1.4789	2504
$3\frac{3}{4}$	$2\frac{1}{2}$	15.7080	1.3654	1.4987	2454
$3\frac{13}{16}$	$2\frac{9}{16}$	16.0222	1.3927	1.5188	2406
$3\frac{7}{8}$	$2\frac{5}{8}$	16.3363	1.4200	1.5393	2360
$3\frac{15}{16}$	$2\frac{11}{16}$	16.6505	1.4474	1.5603	2315
4	$2\frac{3}{4}$	16.9646	1.4747	1.5816	2273
$4\frac{1}{16}$	$2\frac{13}{16}$	17.2788	1.5020	1.6034	2231
$4\frac{1}{8}$	$2\frac{7}{8}$	17.5930	1.5293	1.6255	2191
$4\frac{3}{16}$	$2\frac{15}{16}$	17.9071	1.5566	1.6480	2153
$4\frac{1}{4}$	3	18.2213	1.5839	1.6710	2116
$4\frac{5}{16}$	$3\frac{1}{16}$	18.5354	1.6112	1.6943	2080
$4\frac{3}{8}$	$3\frac{1}{8}$	18.8496	1.6385	1.7181	2045
$4\frac{7}{16}$	$3\frac{3}{16}$	19.1638	1.6658	1.7422	2012
$4\frac{1}{2}$	$3\frac{1}{4}$	19.4779	1.6931	1.7667	1979
$4\frac{9}{16}$	$3\frac{5}{16}$	19.7921	1.7204	1.7917	1948
$4\frac{5}{8}$	$3\frac{3}{8}$	20.1062	1.7477	1.8170	1917
$4\frac{11}{16}$	$3\frac{7}{16}$	20.4204	1.7751	1.8427	1888
$4\frac{3}{4}$	$3\frac{1}{2}$	20.7346	1.8024	1.8688	1859
$4\frac{13}{16}$	$3\frac{9}{16}$	21.0487	1.8297	1.8954	1832
$4\frac{7}{8}$	$3\frac{5}{8}$	21.3629	1.8570	1.9223	1805
$4\frac{15}{16}$	$3\frac{11}{16}$	21.6770	1.8843	1.9496	1779
5	$3\frac{3}{4}$	21.9912	1.9116	1.9774	1753
$5\frac{1}{16}$	$3\frac{13}{16}$	22.3054	1.9389	2.0055	1728
$5\frac{1}{8}$	$3\frac{7}{8}$	22.6195	1.9662	2.0340	1704

Helical Bar.

MACHINERY AND RAILROAD. — HEAVY STEEL SPRING TABLE.

Diameter of Bar $\frac{5}{8}$". — Continued.

Outside Diameter.	Inside Diameter.	Length per Inch of Solid Height.	Weight per Inch of Solid Height.	Free Height per Inch of Solid Height.	Capacity.
$5\frac{3}{16}$	$3\frac{15}{16}$	22.9337	1.9935	2.0629	1681
$5\frac{1}{4}$	4	23.2478	2.0208	2.0922	1658
$5\frac{3}{16}$	$4\frac{1}{16}$	23.5620	2.0481	2.1220	1636
$5\frac{5}{16}$	$4\frac{1}{8}$	23.8762	2.0754	2.1521	1615
$5\frac{7}{16}$	$4\frac{3}{16}$	24.1903	2.1028	2.1826	1594
$5\frac{1}{2}$	$4\frac{1}{4}$	24.5045	2.1301	2.2135	1573
$5\frac{9}{16}$	$4\frac{5}{16}$	24.8186	2.1574	2.2448	1553
$5\frac{5}{8}$	$4\frac{3}{8}$	25.1328	2.1847	2.2765	1534
$5\frac{11}{16}$	$4\frac{7}{16}$	25.4470	2.2120	2.3087	1515
$5\frac{3}{4}$	$4\frac{1}{2}$	25.7611	2.2393	2.3412	1497
$5\frac{13}{16}$	$4\frac{9}{16}$	26.0753	2.2666	2.3741	1479
$5\frac{7}{8}$	$4\frac{5}{8}$	26.3894	2.2939	2.4074	1461
$5\frac{15}{16}$	$4\frac{11}{16}$	26.7036	2.3212	2.4411	1444
6	$4\frac{3}{4}$	27.0178	2.3485	2.4752	1427
$6\frac{1}{16}$	$4\frac{13}{16}$	27.3319	2.3758	2.5097	1411
$6\frac{1}{8}$	$4\frac{7}{8}$	27.6461	2.4031	2.5446	1395
$6\frac{3}{16}$	$4\frac{15}{16}$	27.9602	2.4305	2.5799	1379
$6\frac{1}{4}$	5	28.2744	2.4578	2.6156	1364

Diameter of Bar $\frac{11}{16}$".

$2\frac{1}{4}$	$1\frac{3}{8}$	9.4248	.9913	1.1795	4950
$2\frac{13}{16}$	$1\frac{7}{16}$	9.7104	1.0213	1.1906	4804
$2\frac{7}{8}$	$1\frac{1}{2}$	9.9960	1.0514	1.2019	4667
$2\frac{15}{16}$	$1\frac{5}{16}$	10.2816	1.0814	1.2136	4537
3	$1\frac{5}{8}$	10.5672	1.1115	1.2257	4415
$3\frac{1}{16}$	$1\frac{11}{16}$	10.8528	1.1415	1.2380	4298
$3\frac{1}{8}$	$1\frac{3}{4}$	11.1384	1.1715	1.2507	4188
$3\frac{3}{16}$	$1\frac{13}{16}$	11.4240	1.2016	1.2637	4083
$3\frac{1}{4}$	$1\frac{7}{8}$	11.7096	1.2316	1.2771	3984
$3\frac{5}{16}$	$1\frac{15}{16}$	11.9952	1.2617	1.2908	3889
$3\frac{3}{8}$	2	12.2808	1.2917	1.3048	3799
$3\frac{7}{16}$	$2\frac{1}{16}$	12.5664	1.3217	1.3191	3712
$3\frac{1}{2}$	$2\frac{1}{8}$	12.8520	1.3518	1.3338	3630
$3\frac{9}{16}$	$2\frac{3}{16}$	13.1376	1.3818	1.3488	3551
$3\frac{5}{8}$	$2\frac{1}{4}$	13.4232	1.4118	1.3641	3475
$3\frac{11}{16}$	$2\frac{5}{16}$	13.7088	1.4419	1.3798	3403
$3\frac{3}{4}$	$2\frac{3}{8}$	13.9944	1.4719	1.3958	3333

Helical Bar.

MACHINERY AND RAILROAD. — HEAVY STEEL SPRING TABLE.

Diameter of Bar $\frac{11}{16}$". — Continued.

Outside Diameter.	Inside Diameter.	Length per Inch of Solid Height.	Weight per Inch of Solid Height.	Free Height per Inch of Solid Height.	Capacity.
$3\frac{13}{16}$	$2\frac{7}{16}$	14.2800	1.5020	1.4121	3267
$3\frac{7}{8}$	$2\frac{1}{2}$	14.5656	1.5320	1.4288	3203
$3\frac{15}{16}$	$2\frac{9}{16}$	14.8512	1.5620	1.4457	3141
4	$2\frac{5}{8}$	15.1368	1.5921	1.4630	3082
$4\frac{1}{16}$	$2\frac{11}{16}$	15.4224	1.6221	1.4807	3025
$4\frac{1}{8}$	$2\frac{3}{4}$	15.7080	1.6522	1.4987	2970
$4\frac{3}{16}$	$2\frac{13}{16}$	15.9936	1.6822	1.5169	2917
$4\frac{1}{4}$	$2\frac{7}{8}$	16.2792	1.7122	1.5356	2866
$4\frac{5}{16}$	$2\frac{15}{16}$	16.5648	1.7423	1.5545	2816
$4\frac{3}{8}$	3	16.8504	1.7723	1.5738	2768
$4\frac{7}{16}$	$3\frac{1}{16}$	17.1360	1.8024	1.5934	2722
$4\frac{1}{2}$	$3\frac{1}{8}$	17.4216	1.8324	1.6134	2678
$4\frac{9}{16}$	$3\frac{3}{16}$	17.7072	1.8624	1.6337	2634
$4\frac{5}{8}$	$3\frac{1}{4}$	17.9928	1.8925	1.6543	2593
$4\frac{11}{16}$	$3\frac{5}{16}$	18.2784	1.9225	1.6752	2552
$4\frac{3}{4}$	$3\frac{3}{8}$	18.5640	1.9526	1.6965	2513
$4\frac{13}{16}$	$3\frac{7}{16}$	18.8496	1.9826	1.7181	2475
$4\frac{7}{8}$	$3\frac{1}{2}$	19.1352	2.0126	1.7400	2438
$4\frac{15}{16}$	$3\frac{9}{16}$	19.4208	2.0427	1.7622	2402
5	$3\frac{5}{8}$	19.7064	2.0727	1.7848	2367
$5\frac{1}{16}$	$3\frac{11}{16}$	19.9920	2.1028	1.8077	2333
$5\frac{1}{8}$	$3\frac{3}{4}$	20.2776	2.1328	1.8310	2301
$5\frac{3}{16}$	$3\frac{13}{16}$	20.5632	2.1628	1.8545	2269
$5\frac{1}{4}$	$3\frac{7}{8}$	20.8488	2.1929	1.8784	2238
$5\frac{5}{16}$	$3\frac{15}{16}$	21.1344	2.2229	1.9027	2207
$5\frac{3}{8}$	4	21.4200	2.2530	1.9272	2178
$5\frac{7}{16}$	$4\frac{1}{16}$	21.7056	2.2830	1.9521	2149
$5\frac{1}{2}$	$4\frac{1}{8}$	21.9912	2.3130	1.9774	2121
$5\frac{9}{16}$	$4\frac{3}{16}$	22.2768	2.3431	2.0029	2094
$5\frac{5}{8}$	$4\frac{1}{4}$	22.5624	2.3731	2.0288	2068
$5\frac{11}{16}$	$4\frac{5}{16}$	22.8480	2.4031	2.0550	2042
$5\frac{3}{4}$	$4\frac{3}{8}$	23.1336	2.4332	2.0815	2017
$5\frac{13}{16}$	$4\frac{7}{16}$	23.4192	2.4632	2.1084	1992
$5\frac{7}{8}$	$4\frac{1}{2}$	23.7048	2.4933	2.1356	1968
$5\frac{15}{16}$	$4\frac{9}{16}$	23.9904	2.5233	2.1631	1945
6	$4\frac{5}{8}$	24.2760	2.5533	2.1910	1922
$6\frac{1}{16}$	$4\frac{11}{16}$	24.5616	2.5834	2.2192	1899
$6\frac{1}{8}$	$4\frac{3}{4}$	24.8472	2.6134	2.2477	1877

Helical Bar.

MACHINERY AND RAILROAD. — HEAVY STEEL SPRING TABLE.

Diameter of Bar $\frac{11}{16}$". — Continued.

Outside Diameter.	Inside Diameter.	Length per Inch of Solid Height.	Weight per Inch of Solid Height.	Free Height per Inch of Solid Height.	Capacity.
$6\frac{3}{16}$	$4\frac{13}{16}$	25.1328	2.6435	2.2765	1856
$6\frac{1}{4}$	$4\frac{7}{8}$	25.4184	2.6735	2.3057	1835
$6\frac{5}{16}$	$4\frac{15}{16}$	25.7040	2.7035	2.3352	1815
$6\frac{3}{8}$	5	25.9896	2.7336	2.3651	1795
$6\frac{7}{16}$	$5\frac{1}{16}$	26.2752	2.7636	2.3952	1775
$6\frac{1}{2}$	$5\frac{1}{8}$	26.5608	2.7937	2.4257	1756
$6\frac{9}{16}$	$5\frac{3}{16}$	26.8464	2.8237	2.4566	1738
$6\frac{5}{8}$	$5\frac{1}{4}$	27.1320	2.8537	2.4877	1719
$6\frac{11}{16}$	$5\frac{5}{16}$	27.4176	2.8838	2.5192	1701
$6\frac{3}{4}$	$5\frac{3}{8}$	27.7032	2.9138	2.5510	1684
$6\frac{13}{16}$	$5\frac{7}{16}$	27.9888	2.9439	2.5832	1667
$6\frac{7}{8}$	$5\frac{1}{2}$	28.2744	2.9739	2.6156	1650

Diameter of Bar $\frac{3}{4}$".

3	$1\frac{1}{2}$	9.4248	1.1797	1.1795	5891
$3\frac{1}{16}$	$1\frac{9}{16}$	9.6866	1.2125	1.1896	5731
$3\frac{1}{8}$	$1\frac{5}{8}$	9.9484	1.2453	1.2000	5580
$3\frac{3}{16}$	$1\frac{11}{16}$	10.2102	1.2780	1.2107	5437
$3\frac{1}{4}$	$1\frac{3}{4}$	10.4720	1.3108	1.2216	5301
$3\frac{5}{16}$	$1\frac{13}{16}$	10.7338	1.3436	1.2328	5172
$3\frac{3}{8}$	$1\frac{7}{8}$	10.9956	1.3763	1.2443	5049
$3\frac{7}{16}$	$1\frac{15}{16}$	11.2574	1.4091	1.2561	4932
$3\frac{1}{2}$	2	11.5192	1.4419	1.2682	4820
$3\frac{9}{16}$	$2\frac{1}{16}$	11.7810	1.4747	1.2805	4712
$3\frac{5}{8}$	$2\frac{1}{8}$	12.0428	1.5074	1.2931	4610
$3\frac{11}{16}$	$2\frac{3}{16}$	12.3046	1.5402	1.3060	4512
$3\frac{3}{4}$	$2\frac{1}{4}$	12.5664	1.5730	1.3191	4418
$3\frac{13}{16}$	$2\frac{5}{16}$	12.8282	1.6057	1.3326	4328
$3\frac{7}{8}$	$2\frac{3}{8}$	13.0900	1.6385	1.3463	4241
$3\frac{15}{16}$	$2\frac{7}{16}$	13.3518	1.6713	1.3603	4158
4	$2\frac{1}{2}$	13.6136	1.7041	1.3745	4078
$4\frac{1}{16}$	$2\frac{9}{16}$	13.8754	1.7368	1.3891	4001
$4\frac{1}{4}$	$2\frac{5}{8}$	14.1372	1.7696	1.4039	3927
$4\frac{5}{16}$	$2\frac{11}{16}$	14.3990	1.8024	1.4191	3856

Helical Bar.

MACHINERY AND RAILROAD. — HEAVY STEEL SPRING TABLE.

Diameter of Bar $\frac{1}{4}$". — Continued.

Outside Diameter.	Inside Diameter.	Length per Inch of Solid Height.	Weight per Inch of Solid Height.	Free Height per Inch of Solid Height.	Capacity.
$4\frac{1}{4}$	$2\frac{3}{4}$	14.6608	1.8351	1.4344	3787
$4\frac{5}{16}$	$2\frac{13}{16}$	14.9226	1.8679	1.4500	3720
$4\frac{3}{8}$	$2\frac{7}{8}$	15.1844	1.9007	1.4660	3656
$4\frac{7}{16}$	$2\frac{15}{16}$	15.4462	1.9334	1.4822	3594
$4\frac{1}{2}$	3	15.7080	1.9662	1.4987	3534
$4\frac{9}{16}$	$3\frac{1}{16}$	15.9698	1.9990	1.5154	3476
$4\frac{5}{8}$	$3\frac{1}{8}$	16.2316	2.0318	1.5324	3420
$4\frac{11}{16}$	$3\frac{3}{16}$	16.4934	2.0645	1.5498	3366
$4\frac{3}{4}$	$3\frac{1}{4}$	16.7552	2.0973	1.5674	3313
$4\frac{13}{16}$	$3\frac{5}{16}$	17.0170	2.1301	1.5852	3262
$4\frac{7}{8}$	$3\frac{3}{8}$	17.2788	2.1628	1.6034	3213
$4\frac{15}{16}$	$3\frac{7}{16}$	17.5406	2.1956	1.6218	3165
5	$3\frac{1}{2}$	17.8024	2.2284	1.6405	3119
$5\frac{1}{16}$	$3\frac{9}{16}$	18.0642	2.2611	1.6595	3073
$5\frac{1}{8}$	$3\frac{5}{8}$	18.3260	2.2939	1.6787	3029
$5\frac{3}{16}$	$3\frac{11}{16}$	18.5878	2.3267	1.6982	2987
$5\frac{1}{4}$	$3\frac{3}{4}$	18.8496	2.3595	1.7181	2945
$5\frac{5}{16}$	$3\frac{13}{16}$	19.1114	2.3922	1.7381	2905
$5\frac{3}{8}$	$3\frac{7}{8}$	19.3732	2.4250	1.7585	2866
$5\frac{7}{16}$	$3\frac{15}{16}$	19.6350	2.4578	1.7791	2827
$5\frac{1}{2}$	4	19.8968	2.4905	1.8001	2790
$5\frac{9}{16}$	$4\frac{1}{16}$	20.1586	2.5233	1.8212	2754
$5\frac{5}{8}$	$4\frac{1}{8}$	20.4204	2.5561	1.8427	2719
$5\frac{11}{16}$	$4\frac{3}{16}$	20.6822	2.5888	1.8645	2684
$5\frac{3}{4}$	$4\frac{1}{4}$	20.9440	2.6216	1.8865	2651
$5\frac{13}{16}$	$4\frac{5}{16}$	21.2058	2.6544	1.9088	2618
$5\frac{7}{8}$	$4\frac{3}{8}$	21.4676	2.6872	1.9314	2586
$5\frac{15}{16}$	$4\frac{7}{16}$	21.7294	2.7199	1.9542	2555
6	$4\frac{1}{2}$	21.9912	2.7527	1.9774	2525
$6\frac{1}{16}$	$4\frac{9}{16}$	22.2530	2.7855	2.0008	2495
$6\frac{1}{8}$	$4\frac{5}{8}$	22.5148	2.8182	2.0244	2466
$6\frac{3}{16}$	$4\frac{11}{16}$	22.7766	2.8510	2.0484	2437
$6\frac{1}{4}$	$4\frac{3}{4}$	23.0384	2.8838	2.0727	2410
$6\frac{5}{16}$	$4\frac{13}{16}$	23.3002	2.9165	2.0972	2383
$6\frac{3}{8}$	$4\frac{7}{8}$	23.5620	2.9493	2.1220	2356
$6\frac{7}{16}$	$4\frac{15}{16}$	23.8238	2.9821	2.1470	2330
$6\frac{1}{2}$	5	24.0856	3.0149	2.1724	2305
$6\frac{9}{16}$	$5\frac{1}{16}$	24.3474	3.0476	2.1980	2280

Helical Bar.

MACHINERY AND RAILROAD. — HEAVY STEEL SPRING TABLE.

Diameter of Bar $\frac{1}{4}$". — Continued.

Outside Diameter.	Inside Diameter.	Length per Inch of Solid Height.	Weight per Inch of Solid Height.	Free Height per Inch of Solid Height.	Capacity.
$6\frac{5}{8}$	$5\frac{1}{8}$	24.6092	3.0804	2.2239	2256
$6\frac{11}{16}$	$5\frac{3}{16}$	24.8710	3.1132	2.2501	2232
$6\frac{3}{4}$	$5\frac{1}{4}$	25.1328	3.1459	2.2765	2209
$6\frac{13}{16}$	$5\frac{5}{16}$	25.3946	3.1787	2.3033	2186
$6\frac{7}{8}$	$5\frac{3}{8}$	25.6564	3.2115	2.3303	2164
$6\frac{15}{16}$	$5\frac{7}{16}$	25.9182	3.2442	2.3576	2142
7	$5\frac{1}{2}$	26.1800	3.2770	2.3851	2121
$7\frac{1}{16}$	$5\frac{9}{16}$	26.4418	3.3098	2.4130	2100
$7\frac{1}{8}$	$5\frac{5}{8}$	26.7036	3.3426	2.4411	2080
$7\frac{3}{16}$	$5\frac{11}{16}$	26.9654	3.3753	2.4695	2059
$7\frac{1}{4}$	$5\frac{3}{4}$	27.2272	3.4081	2.4982	2039
$7\frac{5}{16}$	$5\frac{13}{16}$	27.4890	3.4409	2.5271	2020
$7\frac{3}{8}$	$5\frac{7}{8}$	27.7508	3.4736	2.5563	2001
$7\frac{7}{16}$	$5\frac{15}{16}$	28.0126	3.5064	2.5858	1982
$7\frac{1}{2}$	6	28.2744	3.5392	2.6156	1964

Diameter of Bar $\frac{13}{16}$".

$3\frac{1}{2}$	$1\frac{5}{8}$	9.4248	1.3845	1.1795	6913
$3\frac{5}{16}$	$1\frac{11}{16}$	9.6665	1.4200	1.1888	6740
$3\frac{3}{8}$	$1\frac{3}{4}$	9.9081	1.4555	1.1984	6576
$3\frac{7}{16}$	$1\frac{13}{16}$	10.1498	1.4910	1.2082	6419
$3\frac{1}{2}$	$1\frac{7}{8}$	10.3914	1.5265	1.2182	6270
$3\frac{9}{16}$	$1\frac{15}{16}$	10.6331	1.5620	1.2285	6128
$3\frac{5}{8}$	2	10.8748	1.5975	1.2390	5991
$3\frac{11}{16}$	$2\frac{1}{16}$	11.1164	1.6330	1.2497	5861
$3\frac{3}{4}$	$2\frac{1}{8}$	11.3581	1.6685	1.2607	5736
$3\frac{13}{16}$	$2\frac{3}{16}$	11.5998	1.7041	1.2719	5617
$3\frac{7}{8}$	$2\frac{1}{4}$	11.8414	1.7396	1.2834	5502
$3\frac{15}{16}$	$2\frac{5}{16}$	12.0831	1.7751	1.2951	5392
4	$2\frac{3}{8}$	12.3247	1.8106	1.3070	5287
$4\frac{1}{16}$	$2\frac{7}{16}$	12.5664	1.8461	1.3191	5185
$4\frac{1}{8}$	$2\frac{1}{2}$	12.8081	1.8816	1.3315	5087
$4\frac{3}{16}$	$2\frac{9}{16}$	13.0497	1.9171	1.3442	4993
$4\frac{1}{4}$	$2\frac{5}{8}$	13.2914	1.9526	1.3570	4902
$4\frac{5}{16}$	$2\frac{11}{16}$	13.5330	1.9881	1.3701	4815
$4\frac{3}{8}$	$2\frac{3}{4}$	13.7747	2.0236	1.3835	4730
$4\frac{7}{16}$	$2\frac{13}{16}$	14.0164	2.0591	1.3970	4648

Helical Bar.

MACHINERY AND RAILROAD. — HEAVY STEEL SPRING TABLE.

Diameter of Bar $\frac{13}{16}$". — Continued.

Outside Diameter.	Inside Diameter.	Length per Inch of Solid Height.	Weight per Inch of Solid Height.	Free Height per Inch of Solid Height.	Capacity.
$4\frac{1}{2}$	$2\frac{7}{8}$	14.2580	2.0946	1.4108	4570
$4\frac{9}{16}$	$2\frac{15}{16}$	14.4997	2.1301	1.4249	4494
$4\frac{5}{8}$	3	14.7414	2.1656	1.4392	4420
$4\frac{11}{16}$	$3\frac{1}{16}$	14.9830	2.2011	1.4537	4349
$4\frac{3}{4}$	$3\frac{1}{8}$	15.2247	2.2366	1.4684	4280
$4\frac{13}{16}$	$3\frac{3}{16}$	15.4663	2.2721	1.4834	4213
$4\frac{7}{8}$	$3\frac{1}{4}$	15.7080	2.3076	1.4987	4148
$4\frac{15}{16}$	$3\frac{5}{16}$	15.9497	2.3431	1.5141	4085
5	$3\frac{3}{8}$	16.1913	2.3786	1.5298	4024
$5\frac{1}{16}$	$3\frac{7}{16}$	16.4330	2.4141	1.5457	3965
$5\frac{1}{8}$	$3\frac{1}{2}$	16.6746	2.4496	1.5619	3907
$5\frac{3}{16}$	$3\frac{9}{16}$	16.9163	2.4851	1.5783	3852
$5\frac{1}{4}$	$3\frac{5}{8}$	17.1580	2.5206	1.5950	3797
$5\frac{5}{16}$	$3\frac{11}{16}$	17.3996	2.5561	1.6118	3745
$5\frac{3}{8}$	$3\frac{3}{4}$	17.6413	2.5916	1.6289	3693
$5\frac{7}{16}$	$3\frac{13}{16}$	17.8830	2.6271	1.6463	3643
$5\frac{1}{2}$	$3\frac{7}{8}$	18.1246	2.6626	1.6639	3594
$5\frac{9}{16}$	$3\frac{15}{16}$	18.3663	2.6981	1.6817	3548
$5\frac{5}{8}$	4	18.6079	2.7336	1.6998	3501
$5\frac{11}{16}$	$4\frac{1}{16}$	18.8496	2.7691	1.7181	3457
$5\frac{3}{4}$	$4\frac{1}{8}$	19.0913	2.8046	1.7366	3413
$5\frac{13}{16}$	$4\frac{3}{16}$	19.3329	2.8401	1.7554	3370
$5\frac{7}{8}$	$4\frac{1}{4}$	19.5746	2.8756	1.7744	3329
$5\frac{15}{16}$	$4\frac{5}{16}$	19.8162	2.9111	1.7936	3288
6	$4\frac{3}{8}$	20.0579	2.9466	1.8131	3248
$6\frac{1}{16}$	$4\frac{7}{16}$	20.2996	2.9821	1.8328	3210
$6\frac{1}{8}$	$4\frac{1}{2}$	20.5412	3.0176	1.8528	3172
$6\frac{3}{16}$	$4\frac{9}{16}$	20.7829	3.0531	1.8729	3135
$6\frac{1}{4}$	$4\frac{5}{8}$	21.0246	3.0886	1.8933	3099
$6\frac{5}{16}$	$4\frac{11}{16}$	21.2662	3.1241	1.9140	3064
$6\frac{3}{8}$	$4\frac{3}{4}$	21.5079	3.1596	1.9349	3029
$6\frac{7}{16}$	$4\frac{13}{16}$	21.7495	3.1951	1.9560	2996
$6\frac{1}{2}$	$4\frac{7}{8}$	21.9912	3.2306	1.9774	2962
$6\frac{9}{16}$	$4\frac{15}{16}$	22.2329	3.2661	1.9990	2931
$6\frac{5}{8}$	5	22.4745	3.3016	2.0208	2899
$6\frac{11}{16}$	$5\frac{1}{16}$	22.7162	3.3371	2.0429	2868
$6\frac{3}{4}$	$5\frac{1}{8}$	22.9578	3.3726	2.0652	2838
$6\frac{13}{16}$	$5\frac{3}{16}$	23.1995	3.4081	2.0877	2808

Helical Bar.

MACHINERY AND RAILROAD. — HEAVY STEEL SPRING TABLE.

Diameter of Bar $\frac{13}{16}$". — Continued.

Outside Diameter.	Inside Diameter.	Length per Inch of Solid Height.	Weight per Inch of Solid Height.	Free Height per Inch of Solid Height.	Capacity.
$6\frac{7}{8}$	$5\frac{1}{4}$	23.4412	3.4436	2.1105	2780
$6\frac{15}{16}$	$5\frac{5}{16}$	23.6828	3.4791	2.1335	2751
7	$5\frac{3}{8}$	23.9245	3.5146	2.1568	2723
$7\frac{1}{16}$	$5\frac{7}{16}$	24.1662	3.5501	2.1802	2696
$7\frac{1}{8}$	$5\frac{1}{2}$	24.4078	3.5856	2.2040	2669
$7\frac{3}{16}$	$5\frac{9}{16}$	24.6495	3.6211	2.2279	2643
$7\frac{1}{4}$	$5\frac{5}{8}$	24.8911	3.6566	2.2521	2618
$7\frac{5}{16}$	$5\frac{11}{16}$	25.1328	3.6921	2.2765	2592
$7\frac{3}{8}$	$5\frac{3}{4}$	25.3745	3.7276	2.3012	2568
$7\frac{7}{16}$	$5\frac{13}{16}$	25.6161	3.7631	2.3261	2544
$7\frac{1}{2}$	$5\frac{7}{8}$	25.8578	3.7986	2.3513	2520
$7\frac{9}{16}$	$5\frac{15}{16}$	26.0994	3.8341	2.3766	2496
$7\frac{5}{8}$	6	26.3411	3.8696	2.4022	2474
$7\frac{11}{16}$	$6\frac{1}{16}$	26.5828	3.9051	2.4281	2451
$7\frac{3}{4}$	$6\frac{1}{8}$	26.8244	3.9406	2.4542	2429
$7\frac{13}{16}$	$6\frac{3}{16}$	27.0661	3.9761	2.4805	2407
$7\frac{7}{8}$	$6\frac{1}{4}$	27.3077	4.0116	2.5070	2386
$7\frac{15}{16}$	$6\frac{5}{16}$	27.5494	4.0471	2.5338	2365
8	$6\frac{3}{8}$	27.7911	4.0826	2.5609	2344
$8\frac{1}{16}$	$6\frac{7}{16}$	28.0327	4.1181	2.5879	2324
$8\frac{1}{8}$	$6\frac{1}{2}$	28.2744	4.1536	2.6156	2304

Diameter of Bar $\frac{7}{8}$".

$3\frac{1}{2}$	$1\frac{3}{4}$	9.4248	1.6057	1.1795	8017
$3\frac{9}{16}$	$1\frac{13}{16}$	9.6492	1.6440	1.1882	7831
$3\frac{5}{8}$	$1\frac{7}{8}$	9.8736	1.6822	1.1970	7653
$3\frac{11}{16}$	$1\frac{15}{16}$	10.0980	1.7204	1.2061	7483
$3\frac{3}{4}$	2	10.3224	1.7587	1.2153	7320
$3\frac{13}{16}$	$2\frac{1}{16}$	10.5468	1.7969	1.2248	7165
$3\frac{7}{8}$	$2\frac{1}{8}$	10.7712	1.8351	1.2345	7015
$3\frac{15}{16}$	$2\frac{3}{16}$	10.9956	1.8734	1.2443	6872
4	$2\frac{1}{4}$	11.2200	1.9116	1.2544	6735
$4\frac{1}{16}$	$2\frac{5}{16}$	11.4444	1.9498	1.2647	6603
$4\frac{1}{8}$	$2\frac{3}{8}$	11.6688	1.9881	1.2752	6476
$4\frac{3}{16}$	$2\frac{7}{16}$	11.8932	2.0263	1.2856	6354
$4\frac{1}{4}$	$2\frac{1}{2}$	12.1176	2.0645	1.2967	6236
$4\frac{5}{16}$	$2\frac{9}{16}$	12.3420	2.1028	1.3078	6123
$4\frac{3}{8}$	$2\frac{5}{8}$	12.5664	2.1410	1.3191	6019

Helical Bar.

MACHINERY AND RAILROAD. — HEAVY STEEL SPRING TABLE.

Diameter of Bar $\frac{1}{8}$". — Continued.

Outside Diameter.	Inside Diameter.	Length per Inch of Solid Height.	Weight per Inch of Solid Height.	Free Height per Inch of Solid Height.	Capacity.
$4\frac{7}{16}$	$2\frac{11}{16}$	12.7908	2.1792	1.3306	5908
$4\frac{1}{2}$	$2\frac{3}{4}$	13.0152	2.2175	1.3423	5806
$4\frac{9}{16}$	$2\frac{13}{16}$	13.2396	2.2557	1.3542	5707
$4\frac{5}{8}$	$2\frac{7}{8}$	13.4640	2.2939	1.3664	5612
$4\frac{11}{16}$	$2\frac{15}{16}$	13.6884	2.3321	1.3787	5520
$4\frac{3}{4}$	3	13.9128	2.3704	1.3912	5431
$4\frac{13}{16}$	$3\frac{1}{16}$	14.1372	2.4086	1.4039	5345
$4\frac{7}{8}$	$3\frac{1}{8}$	14.3616	2.4468	1.4168	5262
$4\frac{15}{16}$	$3\frac{3}{16}$	14.5860	2.4851	1.4300	5181
5	$3\frac{1}{4}$	14.8104	2.5233	1.4433	5102
$5\frac{1}{16}$	$3\frac{5}{16}$	15.0348	2.5615	1.4568	5026
$5\frac{1}{8}$	$3\frac{3}{8}$	15.2592	2.5998	1.4706	4952
$5\frac{3}{16}$	$3\frac{7}{16}$	15.4836	2.6380	1.4845	4880
$5\frac{1}{4}$	$3\frac{1}{2}$	15.7080	2.6762	1.4986	4811
$5\frac{5}{16}$	$3\frac{9}{16}$	15.9324	2.7145	1.5130	4743
$5\frac{3}{8}$	$3\frac{5}{8}$	16.1568	2.7527	1.5275	4677
$5\frac{7}{16}$	$3\frac{11}{16}$	16.3812	2.7909	1.5423	4613
$5\frac{1}{2}$	$3\frac{3}{4}$	16.6056	2.8292	1.5573	4551
$5\frac{9}{16}$	$3\frac{13}{16}$	16.8300	2.8674	1.5724	4490
$5\frac{5}{8}$	$3\frac{7}{8}$	17.0544	2.9056	1.5878	4431
$5\frac{11}{16}$	$3\frac{15}{16}$	17.2788	2.9439	1.6034	4373
$5\frac{3}{4}$	4	17.5032	2.9821	1.6191	4317
$5\frac{13}{16}$	$4\frac{1}{16}$	17.7276	3.0203	1.6351	4263
$5\frac{7}{8}$	$4\frac{1}{8}$	17.9520	3.0586	1.6513	4209
$5\frac{15}{16}$	$4\frac{3}{16}$	18.1764	3.0968	1.6677	4157
6	$4\frac{1}{4}$	18.4008	3.1350	1.6843	4107
$6\frac{1}{16}$	$4\frac{5}{16}$	18.6252	3.1732	1.7011	4057
$6\frac{1}{8}$	$4\frac{3}{8}$	18.8496	3.2115	1.7181	4009
$6\frac{3}{16}$	$4\frac{7}{16}$	19.0740	3.2497	1.7353	3962
$6\frac{1}{4}$	$4\frac{1}{2}$	19.2984	3.2879	1.7527	3916
$6\frac{5}{16}$	$4\frac{9}{16}$	19.5228	3.3262	1.7703	3871
$6\frac{3}{8}$	$4\frac{5}{8}$	19.7472	3.3644	1.7881	3827
$6\frac{7}{16}$	$4\frac{11}{16}$	19.9716	3.4026	1.8061	3784
$6\frac{1}{2}$	$4\frac{3}{4}$	20.1960	3.4409	1.8243	3742
$6\frac{9}{16}$	$4\frac{13}{16}$	20.4204	3.4791	1.8427	3700
$6\frac{5}{8}$	$4\frac{7}{8}$	20.6448	3.5173	1.8613	3660
$6\frac{11}{16}$	$4\frac{15}{16}$	20.8692	3.5556	1.8802	3621
$6\frac{3}{4}$	5	21.0936	3.5938	1.8992	3582

Helical Bar.

MACHINERY AND RAILROAD. — HEAVY STEEL SPRING TABLE.

Diameter of Bar $\frac{1}{8}$". — Continued.

Outside Diameter.	Inside Diameter.	Length per Inch of Solid Height.	Weight per Inch of Solid Height.	Free Height per Inch of Solid Height.	Capacity.
$6\frac{13}{16}$	$5\frac{1}{16}$	21.3180	3.6320	1.9184	3545
$6\frac{7}{8}$	$5\frac{1}{8}$	21.5424	3.6703	1.9379	3508
$6\frac{15}{16}$	$5\frac{3}{16}$	21.7668	3.7085	1.9409	3472
7	$5\frac{1}{4}$	21.9912	3.7467	1.9774	3436
$7\frac{1}{16}$	$5\frac{5}{16}$	22.2156	3.7850	1.9974	3401
$7\frac{1}{8}$	$5\frac{3}{8}$	22.4400	3.8232	2.0177	3367
$7\frac{3}{16}$	$5\frac{7}{16}$	22.6644	3.8614	2.0381	3334
$7\frac{1}{4}$	$5\frac{1}{2}$	22.8888	3.8997	2.0588	3301
$7\frac{5}{16}$	$5\frac{9}{16}$	23.1132	3.9379	2.0796	3269
$7\frac{3}{8}$	$5\frac{5}{8}$	23.3376	3.9761	2.1007	3238
$7\frac{7}{16}$	$5\frac{11}{16}$	23.5620	4.0143	2.1220	3207
$7\frac{1}{2}$	$5\frac{3}{4}$	23.7864	4.0526	2.1434	3177
$7\frac{9}{16}$	$5\frac{13}{16}$	24.0108	4.0908	2.1651	3147
$7\frac{5}{8}$	$5\frac{7}{8}$	24.2352	4.1290	2.1870	3118
$7\frac{11}{16}$	$5\frac{15}{16}$	24.4596	4.1673	2.2091	3089
$7\frac{3}{4}$	6	24.6840	4.2055	2.2314	3061
$7\frac{13}{16}$	$6\frac{1}{16}$	24.9084	4.2437	2.2538	3034
$7\frac{7}{8}$	$6\frac{1}{8}$	25.1328	4.2820	2.2765	3007
$7\frac{15}{16}$	$6\frac{3}{16}$	25.3572	4.3202	2.2994	2980
8	$6\frac{1}{4}$	25.5816	4.3584	2.3225	2954
$8\frac{1}{16}$	$6\frac{5}{16}$	25.8060	4.3967	2.3458	2928
$8\frac{1}{8}$	$6\frac{3}{8}$	26.0304	4.4349	2.3693	2903
$8\frac{3}{16}$	$6\frac{7}{16}$	26.2548	4.4731	2.3931	2878
$8\frac{1}{4}$	$6\frac{1}{2}$	26.4792	4.5114	2.4170	2854
$8\frac{3}{16}$	$6\frac{9}{16}$	26.7036	4.5496	2.4411	2830
$8\frac{3}{8}$	$6\frac{5}{8}$	26.9280	4.5878	2.4654	2806
$8\frac{7}{16}$	$6\frac{11}{16}$	27.1524	4.6261	2.4899	2783
$8\frac{1}{2}$	$6\frac{3}{4}$	27.3768	4.6643	2.5147	2760
$8\frac{9}{16}$	$6\frac{13}{16}$	27.6012	4.7025	2.5396	2738
$8\frac{5}{8}$	$6\frac{7}{8}$	27.8256	4.7408	2.5647	2716
$8\frac{11}{16}$	$6\frac{15}{16}$	28.0500	4.7790	2.5901	2694
$8\frac{3}{4}$	7	28.2744	4.8172	2.6156	2673

Helical Bar.

MACHINERY AND RAILROAD. — HEAVY STEEL SPRING TABLE.

Diameter of Bar $\frac{11}{16}$".

Outside Diameter.	Inside Diameter.	Length per Inch of Solid Height.	Weight per Inch of Solid Height.	Free Height per Inch of Solid Height.	Capacity.
$3\frac{3}{4}$	$1\frac{7}{8}$	9.4248	1.8433	1.1795	9204
$3\frac{13}{16}$	$1\frac{15}{16}$	9.6342	1.8843	1.1876	9004
$3\frac{7}{8}$	2	9.8437	1.9252	1.1958	8812
$3\frac{15}{16}$	$2\frac{1}{16}$	10.0531	1.9662	1.2042	8629
4	$2\frac{1}{8}$	10.2626	2.0072	1.2128	8453
$4\frac{1}{16}$	$2\frac{3}{16}$	10.4720	2.0481	1.2216	8284
$4\frac{1}{8}$	$2\frac{1}{4}$	10.6814	2.0891	1.2306	8121
$4\frac{3}{16}$	$2\frac{5}{16}$	10.8909	2.1301	1.2397	7965
$4\frac{1}{4}$	$2\frac{3}{8}$	11.1003	2.1710	1.2490	7815
$4\frac{5}{16}$	$2\frac{7}{16}$	11.3098	2.2120	1.2585	7670
$4\frac{3}{8}$	$2\frac{1}{2}$	11.5192	2.2530	1.2682	7530
$4\frac{7}{16}$	$2\frac{9}{16}$	11.7286	2.2939	1.2780	7396
$4\frac{1}{2}$	$2\frac{5}{8}$	11.9381	2.3349	1.2880	7266
$4\frac{9}{16}$	$2\frac{11}{16}$	12.1475	2.3758	1.2982	7141.
$4\frac{5}{8}$	$2\frac{3}{4}$	12.3570	2.4168	1.3086	7020
$4\frac{11}{16}$	$2\frac{13}{16}$	12.5664	2.4578	1.3191	6903
$4\frac{3}{4}$	$2\frac{7}{8}$	12.7758	2.4987	1.3299	6790
$4\frac{13}{16}$	$2\frac{15}{16}$	12.9853	2.5397	1.3408	6680
$4\frac{7}{8}$	3	13.1947	2.5807	1.3518	6574
$4\frac{15}{16}$	$3\frac{1}{16}$	13.4042	2.6216	1.3631	6471
5	$3\frac{1}{8}$	13.6136	2.6626	1.3745	6372
$5\frac{1}{16}$	$3\frac{3}{16}$	13.8230	2.7035	1.3862	6275
$5\frac{1}{8}$	$3\frac{1}{4}$	14.0325	2.7445	1.3979	6182
$5\frac{3}{16}$	$3\frac{5}{16}$	14.2419	2.7855	1.4099	6091
$5\frac{1}{4}$	$3\frac{3}{8}$	14.4514	2.8264	1.4221	6003
$5\frac{5}{16}$	$3\frac{7}{16}$	14.6608	2.8674	1.4344	5917
$5\frac{3}{8}$	$3\frac{1}{2}$	14.8702	2.9084	1.4469	5833
$5\frac{7}{16}$	$3\frac{9}{16}$	15.0797	2.9493	1.4596	5752
$5\frac{1}{2}$	$3\frac{5}{8}$	15.2891	2.9903	1.4724	5674
$5\frac{9}{16}$	$3\frac{11}{16}$	15.4986	3.0312	1.4854	5597
$5\frac{5}{8}$	$3\frac{3}{4}$	15.7080	3.0722	1.4987	5522
$5\frac{11}{16}$	$3\frac{13}{16}$	15.9174	3.1132	1.5120	5450
$5\frac{3}{4}$	$3\frac{7}{8}$	16.1269	3.1541	1.5256	5379
$5\frac{13}{16}$	$3\frac{15}{16}$	16.3363	3.1951	1.5393	5310
$5\frac{7}{8}$	4	16.5458	3.2361	1.5533	5243
$5\frac{15}{16}$	$4\frac{1}{16}$	16.7552	3.2770	1.5674	5177
6	$4\frac{1}{8}$	16.9646	3.3180	1.5816	5113

Helical Bar.

MACHINERY AND RAILROAD. — HEAVY STEEL SPRING TABLE.

Diameter of Bar $\frac{15}{16}$". — Continued.

Outside Diameter.	Inside Diameter.	Length per Inch of Solid Height.	Weight per Inch of Solid Height.	Free Height per Inch of Solid Height.	Capacity.
$6\frac{1}{16}$	$4\frac{3}{16}$	17.1741	3.3589	1.5961	5051
$6\frac{1}{8}$	$4\frac{1}{4}$	17.3835	3.3999	1.6107	4990
$6\frac{3}{16}$	$4\frac{5}{16}$	17.5930	3.4409	1.6255	4931
$6\frac{1}{4}$	$4\frac{3}{8}$	17.8024	3.4818	1.6405	4873
$6\frac{5}{16}$	$4\frac{7}{16}$	18.0118	3.5228	1.6556	4816
$6\frac{3}{8}$	$4\frac{1}{2}$	18.2213	3.5638	1.6710	4761
$6\frac{7}{16}$	$4\frac{9}{16}$	18.4307	3.6047	1.6865	4707
$6\frac{1}{2}$	$4\frac{5}{8}$	18.6402	3.6457	1.7022	4654
$6\frac{9}{16}$	$4\frac{11}{16}$	18.8496	3.6866	1.7181	4602
$6\frac{5}{8}$	$4\frac{3}{4}$	19.0590	3.7276	1.7341	4551
$6\frac{11}{16}$	$4\frac{13}{16}$	19.2685	3.7686	1.7503	4502
$6\frac{3}{4}$	$4\frac{7}{8}$	19.4779	3.8095	1.7667	4454
$6\frac{13}{16}$	$4\frac{15}{16}$	19.6874	3.8505	1.7833	4406
$6\frac{7}{8}$	5	19.8968	3.8915	1.8000	4360
$6\frac{15}{16}$	$5\frac{1}{16}$	20.1062	3.9324	1.8171	4314
7	$5\frac{1}{8}$	20.3157	3.9734	1.8341	4270
$7\frac{1}{16}$	$5\frac{3}{16}$	20.5251	4.0143	1.8514	4226
$7\frac{1}{8}$	$5\frac{1}{4}$	20.7346	4.0553	1.8688	4184
$7\frac{3}{16}$	$5\frac{5}{16}$	20.9440	4.0963	1.8865	4142
$7\frac{1}{4}$	$5\frac{3}{8}$	21.1534	4.1372	1.9043	4101
$7\frac{5}{16}$	$5\frac{7}{16}$	21.3629	4.1782	1.9223	4061
$7\frac{3}{8}$	$5\frac{1}{2}$	21.5723	4.2192	1.9405	4021
$7\frac{7}{16}$	$5\frac{9}{16}$	21.7818	4.2601	1.9588	3982
$7\frac{1}{2}$	$5\frac{5}{8}$	21.9912	4.3011	1.9774	3945
$7\frac{9}{16}$	$5\frac{11}{16}$	22.2006	4.3421	1.9961	3907
$7\frac{5}{8}$	$5\frac{3}{4}$	22.4101	4.3830	2.0149	3871
$7\frac{11}{16}$	$5\frac{13}{16}$	22.6195	4.4240	2.0340	3835
$7\frac{3}{4}$	$5\frac{7}{8}$	22.8290	4.4649	2.0532	3800
$7\frac{13}{16}$	$5\frac{15}{16}$	23.0384	4.5059	2.0727	3765
$7\frac{7}{8}$	6	23.2478	4.5469	2.0922	3731
$7\frac{15}{16}$	$6\frac{1}{16}$	23.4573	4.5878	2.1120	3698
8	$6\frac{1}{8}$	23.6667	4.6288	2.1320	3665
$8\frac{1}{16}$	$6\frac{3}{16}$	23.8762	4.6698	2.1521	3633
$8\frac{1}{8}$	$6\frac{1}{4}$	24.0856	4.7107	2.1724	3602
$8\frac{3}{16}$	$6\frac{5}{16}$	24.2950	4.7517	2.1929	3570
$8\frac{1}{4}$	$6\frac{3}{8}$	24.5045	4.7926	2.2135	3523
$8\frac{5}{16}$	$6\frac{7}{16}$	24.7139	4.8336	2.2343	3510
$8\frac{3}{8}$	$6\frac{1}{2}$	24.9234	4.8746	2.2554	3480

Helical Bar.

MACHINERY AND RAILROAD. — HEAVY STEEL SPRING TABLE.

Diameter of Bar $\frac{15}{16}$". — Continued.

Outside Diameter.	Inside Diameter.	Length per Inch of Solid Height.	Weight per Inch of Solid Height.	Free Height per Inch of Solid Height.	Capacity.
$8\frac{7}{16}$	$6\frac{9}{16}$	25.1328	4.9155	2.2765	3451
$8\frac{1}{2}$	$6\frac{5}{8}$	25.3422	4.9565	2.2979	3423
$8\frac{9}{16}$	$6\frac{11}{16}$	25.5517	4.9975	2.3195	3395
$8\frac{5}{8}$	$6\frac{3}{4}$	25.7611	5.0384	2.3412	3367
$8\frac{11}{16}$	$6\frac{13}{16}$	25.9706	5.0794	2.3631	3340
$8\frac{3}{4}$	$6\frac{7}{8}$	26.1800	5.1203	2.3851	3313
$8\frac{13}{16}$	$6\frac{15}{16}$	26.3894	5.1613	2.4074	3287
$8\frac{7}{8}$	7	26.5989	5.2023	2.4298	3261
$8\frac{15}{16}$	$7\frac{1}{16}$	26.8083	5.2432	2.4524	3236
9	$7\frac{1}{8}$	27.0178	5.2842	2.4752	3211
$9\frac{1}{16}$	$7\frac{3}{16}$	27.2272	5.3252	2.4982	3186
$9\frac{1}{8}$	$7\frac{1}{4}$	27.4366	5.3661	2.5213	3162
$9\frac{3}{16}$	$7\frac{5}{16}$	27.6461	5.4071	2.5446	3138
$9\frac{1}{4}$	$7\frac{3}{8}$	27.8555	5.4480	2.5681	3114
$9\frac{5}{16}$	$7\frac{7}{16}$	28.0650	5.4890	2.5918	3091
$9\frac{3}{8}$	$7\frac{1}{2}$	28.2744	5.5300	2.6156	3068

Diameter of Bar 1".

4	2	9.4248	2.0973	1.1795	10,472
$4\frac{1}{16}$	$2\frac{1}{16}$	9.6212	2.1410	1.1871	10,053
$4\frac{1}{8}$	$2\frac{1}{8}$	9.8175	2.1847	1.1948	10,053
$4\frac{3}{16}$	$2\frac{3}{16}$	10.0138	2.2284	1.2027	9,856
$4\frac{1}{4}$	$2\frac{1}{4}$	10.2102	2.2721	1.2107	9,666
$4\frac{5}{16}$	$2\frac{5}{16}$	10.4066	2.3158	1.2189	9,484
$4\frac{3}{8}$	$2\frac{3}{8}$	10.6029	2.3595	1.2272	9,308
$4\frac{7}{16}$	$2\frac{7}{16}$	10.7992	2.4031	1.2357	9,139
$4\frac{1}{2}$	$2\frac{1}{2}$	10.9956	2.4468	1.2443	8,976
$4\frac{9}{16}$	$2\frac{9}{16}$	11.1920	2.4905	1.2531	8,819
$4\frac{5}{8}$	$2\frac{5}{8}$	11.3883	2.5342	1.2621	8,666
$4\frac{11}{16}$	$2\frac{11}{16}$	11.5846	2.5779	1.2712	8,520
$4\frac{3}{4}$	$2\frac{3}{4}$	11.7810	2.6216	1.2805	8,378
$4\frac{13}{16}$	$2\frac{13}{16}$	11.9774	2.6653	1.2899	8,240
$4\frac{7}{8}$	$2\frac{7}{8}$	12.1737	2.7090	1.2995	8,107
$4\frac{15}{16}$	$2\frac{15}{16}$	12.3700	2.7527	1.3092	7,979
5	3	12.5664	2.7964	1.3191	7,854
$5\frac{1}{16}$	$3\frac{1}{16}$	12.7628	2.8401	1.3292	7,733

Helical Bar.

MACHINERY AND RAILROAD. — HEAVY STEEL SPRING TABLE.

Diameter of Bar 1″. — Continued.

Outside Diameter.	Inside Diameter.	Length per Inch of Solid Height.	Weight per Inch of Solid Height.	Free Height per Inch of Solid Height.	Capacity.
5 1/8	3 1/8	12.9591	2.8838	1.3394	7,616
5 3/16	3 3/16	13.1554	2.9275	1.3498	7,502
5 1/4	3 1/4	13.3518	2.9712	1.3603	7,392
5 5/16	3 5/16	13.5482	3.0149	1.3709	7,285
5 3/8	3 3/8	13.7445	3.0586	1.3818	7,181
5 7/16	3 7/16	13.9408	3.1022	1.3928	7,080
5 1/2	3 1/2	14.1372	3.1459	1.4039	6,981
5 9/16	3 9/16	14.3336	3.1896	1.4152	6,886
5 5/8	3 5/8	14.5299	3.2333	1.4267	6,793
5 11/16	3 11/16	14.7262	3.2770	1.4383	6,702
5 3/4	3 3/4	14.9226	3.3207	1.4500	6,614
5 13/16	3 13/16	15.1190	3.3644	1.4620	6,528
5 7/8	3 7/8	15.3153	3.4081	1.4740	6,444
5 15/16	3 15/16	15.5116	3.4518	1.4863	6,363
6	4	15.7080	3.4955	1.4987	6,283
6 1/16	4 1/16	15.9044	3.5392	1.5112	6,206
6 1/8	4 1/8	16.1007	3.5829	1.5239	6,130
6 3/16	4 3/16	16.2970	3.6266	1.5367	6,056
6 1/4	4 1/4	16.4934	3.6703	1.5498	5,984
6 5/16	4 5/16	16.6898	3.7140	1.5629	5,916
6 3/8	4 3/8	16.8861	3.7576	1.5763	5,845
6 7/16	4 7/16	17.0824	3.8013	1.5897	5,778
6 1/2	4 1/2	17.2788	3.8450	1.6034	5,712
6 9/16	4 9/16	17.4752	3.8887	1.6171	5,648
6 5/8	4 5/8	17.6715	3.9324	1.6311	5,585
6 11/16	4 11/16	17.8678	3.9761	1.6452	5,524
6 3/4	4 3/4	18.0642	4.0198	1.6595	5,464
6 13/16	4 13/16	18.2606	4.0635	1.6739	5,405
6 7/8	4 7/8	18.4569	4.1072	1.6884	5,347
6 15/16	4 15/16	18.6532	4.1509	1.7032	5,291
7	5	18.8496	4.1946	1.7181	5,236
7 1/16	5 1/16	19.0460	4.2383	1.7331	5,182
7 1/8	5 1/8	19.2423	4.2820	1.7483	5,129
7 3/16	5 3/16	19.4386	4.3257	1.7636	5,077
7 1/4	5 1/4	19.6350	4.3694	1.7791	5,027
7 5/16	5 5/16	19.8314	4.4131	1.7948	4,977
7 3/8	5 3/8	20.0277	4.4567	1.8106	4,928
7 7/16	5 7/16	20.2240	4.5004	1.8266	4,880

Helical Bar.

MACHINERY AND RAILROAD. — HEAVY STEEL SPRING TABLE.

Diameter of Bar 1″. — Continued.

Outside Diameter.	Inside Diameter.	Length per Inch of Solid Height.	Weight per Inch of Solid Height.	Free Height per Inch of Solid Height.	Capacity.
7½	5½	20.4204	4.5441	1.8427	4,833
7 9/16	5 9/16	20.6168	4.5878	1.8590	4,787
7⅝	5⅝	20.8131	4.6315	1.8754	4,742
7 11/16	5 11/16	21.0094	4.6752	1.8920	4,698
7¾	5¾	21.2058	4.7189	1.9088	4,654
7 13/16	5 13/16	21.4022	4.7626	1.9257	4,612
7⅞	5⅞	21.5985	4.8063	1.9428	4,570
7 15/16	5 15/16	21.7948	4.8500	1.9600	4,528
8	6	21.9912	4.8937	1.9774	4,488
8 1/16	6 1/16	22.1876	4.9374	1.9949	4,448
8⅛	6⅛	22.3839	4.9811	2.0126	4,409
8 3/16	6 3/16	22.5802	5.0248	2.0304	4,371
8¼	6¼	22.7766	5.0685	2.0484	4,333
8 5/16	6 5/16	22.9730	5.1122	2.0666	4,296
8⅜	6⅜	23.1693	5.1558	2.0849	4,260
8 7/16	6 7/16	23.3656	5.1995	2.1033	4,224
8½	6½	23.5620	5.2432	2.1220	4,189
8 9/16	6 9/16	23.7584	5.2869	2.1407	4,154
8⅝	6⅝	23.9547	5.3306	2.1597	4,120
8 11/16	6 11/16	24.1510	5.3743	2.1788	4,087
8¾	6¾	24.3474	5.4180	2.1980	4,054
8 13/16	6 13/16	24.5438	5.4617	2.2174	4,021
8⅞	6⅞	24.7401	5.5054	2.2370	3,989
8 15/16	6 15/16	24.9364	5.5491	2.2567	3,958
9	7	25.1328	5.5928	2.2765	3,927
9 1/16	7 1/16	25.3292	5.6365	2.2966	3,897
9⅛	7⅛	25.5255	5.6802	2.3167	3,867
9 3/16	7 3/16	25.7218	5.7239	2.3371	3,837
9¼	7¼	25.9182	5.7676	2.3576	3,808
9 5/16	7 5/16	26.1146	5.8112	2.3782	3,779
9⅜	7⅜	26.3109	5.8549	2.3990	3,751
9 7/16	7 7/16	26.5072	5.8986	2.4200	3,723
9½	7½	26.7036	5.9423	2.4411	3,696
9 9/16	7 9/16	26.9000	5.9860	2.4624	3,669
9⅝	7⅝	27.0963	6.0297	2.4838	3,642
9 11/16	7 11/16	27.2926	6.0734	2.5054	3,616
9¾	7¾	27.4890	6.1171	2.5271	3,590
9 13/16	7 13/16	27.6854	6.1608	2.5490	3,565
9⅞	7⅞	27.8817	6.2045	2.5711	3,540
9 15/16	7 15/16	28.0780	6.2482	2.5933	3,515
10	8	28.2744	6.2919	2.6156	3,491

Helical Bar.

MACHINERY AND RAILROAD. — HEAVY STEEL SPRING TABLE.

Diameter of Bar $1\frac{1}{16}$".

Outside Diameter.	Inside Diameter.	Length per Inch of Solid Height.	Weight per Inch of Solid Height.	Free Height per Inch of Solid Height	Capacity.
$4\frac{1}{4}$	$2\frac{1}{8}$	9.4248	2.3676	1.1795	11,822
$4\frac{5}{16}$	$2\frac{3}{16}$	9.6096	2.4141	1.1866	11,595
$4\frac{3}{8}$	$2\frac{1}{4}$	9.7944	2.4605	1.1939	11,376
$4\frac{7}{16}$	$2\frac{5}{16}$	9.9792	2.5069	1.2013	11,165
$4\frac{1}{2}$	$2\frac{3}{8}$	10.1640	2.5533	1.2088	10,962
$4\frac{9}{16}$	$2\frac{7}{16}$	10.3488	2.5998	1.2164	10,766
$4\frac{5}{8}$	$2\frac{1}{2}$	10.5336	2.6462	1.2242	10,578
$4\frac{11}{16}$	$2\frac{9}{16}$	10.7184	2.6926	1.2322	10,395
$4\frac{3}{4}$	$2\frac{5}{8}$	10.9032	2.7390	1.2402	10,219
$4\frac{13}{16}$	$2\frac{11}{16}$	11.0880	2.7855	1.2485	10,049
$4\frac{7}{8}$	$2\frac{3}{4}$	11.2728	2.8319	1.2568	9,884
$4\frac{15}{16}$	$2\frac{13}{16}$	11.4576	2.8783	1.2653	9,724
5	$2\frac{7}{8}$	11.6424	2.9247	1.2739	9,570
$5\frac{1}{16}$	$2\frac{15}{16}$	11.8272	2.9712	1.2827	9,421
$5\frac{1}{8}$	3	12.0120	3.0176	1.2916	9,276
$5\frac{3}{16}$	$3\frac{1}{16}$	12.1968	3.0640	1.3006	9,135
$5\frac{1}{4}$	$3\frac{1}{8}$	12.3816	3.1104	1.3098	8,999
$5\frac{5}{16}$	$3\frac{3}{16}$	12.5664	3.1569	1.3191	8,866
$5\frac{3}{8}$	$3\frac{1}{4}$	12.7512	3.2033	1.3286	8,738
$5\frac{7}{16}$	$3\frac{5}{16}$	12.9360	3.2497	1.3382	8,613
$5\frac{1}{2}$	$3\frac{3}{8}$	13.1208	3.2961	1.3479	8,492
$5\frac{9}{16}$	$3\frac{7}{16}$	13.3056	3.3426	1.3578	8,374
$5\frac{5}{8}$	$3\frac{1}{2}$	13.4904	3.3890	1.3678	8,259
$5\frac{11}{16}$	$3\frac{9}{16}$	13.6752	3.4354	1.3779	8,148
$5\frac{3}{4}$	$3\frac{5}{8}$	13.8600	3.4818	1.3882	8,039
$5\frac{13}{16}$	$3\frac{11}{16}$	14.0448	3.5283	1.3986	7,933
$5\frac{7}{8}$	$3\frac{3}{4}$	14.2296	3.5747	1.4092	7,830
$5\frac{15}{16}$	$3\frac{13}{16}$	14.4144	3.6211	1.4199	7,730
6	$3\frac{7}{8}$	14.5992	3.6675	1.4307	7,632
$6\frac{1}{16}$	$3\frac{15}{16}$	14.7840	3.7140	1.4417	7,536
$6\frac{1}{8}$	4	14.9688	3.7604	1.4528	7,443
$6\frac{3}{16}$	$4\frac{1}{16}$	15.1536	3.8068	1.4641	7,353
$6\frac{1}{4}$	$4\frac{1}{8}$	15.3384	3.8532	1.4755	7,264
$6\frac{5}{16}$	$4\frac{3}{16}$	15.5232	3.8997	1.4870	7,199
$6\frac{3}{8}$	$4\frac{1}{4}$	15.7080	3.9461	1.4986	7,093
$6\frac{7}{16}$	$4\frac{5}{16}$	15.8928	3.9925	1.5105	7,011
$6\frac{1}{2}$	$4\frac{3}{8}$	16.0776	4.0389	1.5224	6,930
$6\frac{9}{16}$	$4\frac{7}{16}$	16.2624	4.0854	1.5345	6,851

Helical Bar.

MACHINERY AND RAILROAD. — HEAVY STEEL SPRING TABLE.

Diameter of Bar $1\frac{1}{16}$". — Continued.

Outside Diameter.	Inside Diameter.	Length per Inch of Solid Height.	Weight per Inch of Solid Height.	Free Height per Inch of Solid Height.	Capacity.
$6\frac{5}{8}$	$4\frac{1}{2}$	16.4472	4.1318	1.5467	6,774
$6\frac{11}{16}$	$4\frac{9}{16}$	16.6320	4.1782	1.5590	6,699
$6\frac{3}{4}$	$4\frac{5}{8}$	16.8168	4.2246	1.5715	6,625
$6\frac{13}{16}$	$4\frac{11}{16}$	17.0016	4.2710	1.5842	6,553
$6\frac{7}{8}$	$4\frac{3}{4}$	17.1864	4.3175	1.5969	6,483
$6\frac{15}{16}$	$4\frac{13}{16}$	17.3712	4.3639	1.6098	6,414
7	$4\frac{7}{8}$	17.5560	4.4103	1.6229	6,346
$7\frac{1}{16}$	$4\frac{15}{16}$	17.7408	4.4567	1.6361	6,280
$7\frac{1}{8}$	5	17.9256	4.5032	1.6494	6,216
$7\frac{3}{16}$	$5\frac{1}{16}$	18.1104	4.5496	1.6628	6,152
$7\frac{1}{4}$	$5\frac{1}{8}$	18.2952	4.5960	1.6764	6,090
$7\frac{5}{16}$	$5\frac{3}{16}$	18.4800	4.6424	1.6902	6,029
$7\frac{3}{8}$	$5\frac{1}{4}$	18.6648	4.6889	1.7040	5,969
$7\frac{7}{16}$	$5\frac{5}{16}$	18.8496	4.7353	1.7181	5,911
$7\frac{1}{2}$	$5\frac{3}{8}$	19.0344	4.7817	1.7322	5,854
$7\frac{9}{16}$	$5\frac{7}{16}$	19.2192	4.8281	1.7465	5,797
$7\frac{5}{8}$	$5\frac{1}{2}$	19.4040	4.8746	1.7609	5,742
$7\frac{11}{16}$	$5\frac{9}{16}$	19.5888	4.9210	1.7755	5,688
$7\frac{3}{4}$	$5\frac{5}{8}$	19.7736	4.9674	1.7902	5,635
$7\frac{13}{16}$	$5\frac{11}{16}$	19.9584	5.0138	1.8050	5,583
$7\frac{7}{8}$	$5\frac{3}{4}$	20.1432	5.0603	1.8200	5,531
$7\frac{15}{16}$	$5\frac{13}{16}$	20.3280	5.1067	1.8351	5,481
8	$5\frac{7}{8}$	20.5128	5.1531	1.8504	5,432
$8\frac{1}{16}$	$5\frac{15}{16}$	20.6976	5.1995	1.8658	5,383
$8\frac{1}{8}$	6	20.8824	5.2460	1.8813	5,336
$8\frac{3}{16}$	$6\frac{1}{16}$	21.0672	5.2924	1.8969	5,289
$8\frac{1}{4}$	$6\frac{1}{8}$	21.2520	5.3388	1.9128	5,243
$8\frac{5}{16}$	$6\frac{3}{16}$	21.4368	5.3852	1.9287	5,198
$8\frac{3}{8}$	$6\frac{1}{4}$	21.6216	5.4317	1.9448	5,153
$8\frac{7}{16}$	$6\frac{5}{16}$	21.8064	5.4781	1.9610	5,109
$8\frac{1}{2}$	$6\frac{3}{8}$	21.9912	5.5245	1.9774	5,067
$8\frac{9}{16}$	$6\frac{7}{16}$	22.1760	5.5709	1.9938	5,024
$8\frac{5}{8}$	$6\frac{1}{2}$	22.3608	5.6174	2.0105	4,983
$8\frac{11}{16}$	$6\frac{9}{16}$	22.5456	5.6638	2.0273	4,942
$8\frac{3}{4}$	$6\frac{5}{8}$	22.7304	5.7102	2.0442	4,902
$8\frac{13}{16}$	$6\frac{11}{16}$	22.9152	5.7566	2.0612	4,862
$8\frac{7}{8}$	$6\frac{3}{4}$	23.1000	5.8031	2.0784	4,823
$8\frac{15}{16}$	$6\frac{13}{16}$	23.2848	5.8495	2.0957	4,785

Helical Bar.

MACHINERY AND RAILROAD. — HEAVY STEEL SPRING TABLE.

Diameter of Bar $1\frac{1}{16}$". — Continued.

Outside Diameter.	Inside Diameter.	Length per Inch of Solid Height.	Weight per Inch of Solid Height.	Free Height per Inch of Solid Height.	Capacity.
9	$6\frac{7}{8}$	23.4696	5.8959	2.1113	4,747
$9\frac{1}{16}$	$6\frac{15}{16}$	23.6544	5.9423	2.1308	4,710
$9\frac{1}{8}$	7	23.8392	5.9888	2.1485	4,674
$9\frac{3}{16}$	$7\frac{1}{16}$	24.0240	6.0352	2.1664	4,638
$9\frac{1}{4}$	$7\frac{1}{8}$	24.2088	6.0816	2.1844	4,602
$9\frac{5}{16}$	$7\frac{3}{16}$	24.3936	6.1280	2.2025	4,568
$9\frac{3}{8}$	$7\frac{1}{4}$	24.5784	6.1745	2.2208	4,533
$9\frac{7}{16}$	$7\frac{5}{16}$	24.7632	6.2209	2.2393	4,499
$9\frac{1}{2}$	$7\frac{3}{8}$	24.9480	6.2673	2.2578	4,466
$9\frac{9}{16}$	$7\frac{7}{16}$	25.1328	6.3137	2.2765	4,433
$9\frac{5}{8}$	$7\frac{1}{2}$	25.3176	6.3601	2.2954	4,401
$9\frac{11}{16}$	$7\frac{9}{16}$	25.5024	6.4066	2.3144	4,369
$9\frac{3}{4}$	$7\frac{5}{8}$	25.6872	6.4530	2.3335	4,338
$9\frac{13}{16}$	$7\frac{11}{16}$	25.8720	6.4994	2.3527	4,307
$9\frac{7}{8}$	$7\frac{3}{4}$	26.0568	6.5458	2.3721	4,276
$9\frac{15}{16}$	$7\frac{13}{16}$	26.2416	6.5923	2.3917	4,246
10	$7\frac{7}{8}$	26.4264	6.6387	2.4113	4,216
$10\frac{1}{16}$	$7\frac{15}{16}$	26.6112	6.6851	2.4311	4,187
$10\frac{1}{8}$	8	26.7960	6.7315	2.4511	4,158
$10\frac{3}{16}$	$8\frac{1}{16}$	26.9808	6.7780	2.4712	4,130
$10\frac{1}{4}$	$8\frac{1}{8}$	27.1656	6.8244	2.4914	4,101
$10\frac{5}{16}$	$8\frac{3}{16}$	27.3504	6.8708	2.5118	4,074
$10\frac{3}{8}$	$8\frac{1}{4}$	27.5352	6.9172	2.5323	4,046
$10\frac{7}{16}$	$8\frac{5}{16}$	27.7200	6.9637	2.5529	4,019
$10\frac{1}{2}$	$8\frac{3}{8}$	27.9048	7.0101	2.5737	3,993
$10\frac{3}{16}$	$8\frac{7}{16}$	28.0896	7.0565	2.5946	3,967
$10\frac{5}{8}$	$8\frac{1}{2}$	28.2744	7.1029	2.6156	3,941

Diameter of Bar $1\frac{1}{8}$".

$4\frac{1}{2}$	$2\frac{1}{4}$	9.4248	2.6544	1.1795	13,254
$4\frac{9}{16}$	$2\frac{5}{16}$	9.5993	2.7035	1.1862	13,013
$4\frac{5}{8}$	$2\frac{3}{8}$	9.7739	2.7527	1.1931	12,780
$4\frac{11}{16}$	$2\frac{7}{16}$	9.9484	2.8019	1.2000	12,556
$4\frac{3}{4}$	$2\frac{1}{2}$	10.1229	2.8510	1.2071	12,340
$4\frac{13}{16}$	$2\frac{9}{16}$	10.2975	2.9002	1.2143	12,130
$4\frac{7}{8}$	$2\frac{5}{8}$	10.4720	2.9493	1.2216	11,928
$4\frac{15}{16}$	$2\frac{11}{16}$	10.6465	2.9985	1.2291	11,733

Helical Bar.

MACHINERY AND RAILROAD. — HEAVY STEEL SPRING TABLE.

Diameter of Bar $1\frac{1}{8}$". — Continued.

Outside Diameter.	Inside Diameter.	Length per Inch of Solid Height.	Weight per Inch of Solid Height.	Free Height per Inch of Solid Height.	Capacity.
5	$2\frac{1}{4}$	10.8211	3.0476	1.2305	11,543
$5\frac{1}{16}$	$2\frac{13}{16}$	10.9956	3.0968	1.2443	11,360
$5\frac{1}{8}$	$2\frac{7}{16}$	11.1701	3.1459	1.2522	11,183
$5\frac{3}{16}$	$2\frac{13}{16}$	11.3447	3.1951	1.2601	11,011
$5\frac{1}{4}$	3	11.5192	3.2442	1.2682	10,844
$5\frac{5}{16}$	$3\frac{1}{16}$	11.6937	3.2934	1.2764	10,682
$5\frac{3}{8}$	$3\frac{1}{8}$	11.8683	3.3426	1.2847	10,525
$5\frac{7}{16}$	$3\frac{3}{16}$	12.0428	3.3917	1.2931	10,372
$5\frac{1}{2}$	$3\frac{1}{4}$	12.2173	3.4409	1.3017	10,224
$5\frac{9}{16}$	$3\frac{5}{16}$	12.3919	3.4900	1.3103	10,080
$5\frac{5}{8}$	$3\frac{3}{8}$	12.5664	3.5392	1.3191	9,940
$5\frac{11}{16}$	$3\frac{7}{16}$	12.7409	3.5883	1.3281	9,804
$5\frac{3}{4}$	$3\frac{1}{2}$	12.9155	3.6375	1.3371	9,672
$5\frac{13}{16}$	$3\frac{9}{16}$	13.0900	3.6866	1.3463	9,543
$5\frac{7}{8}$	$3\frac{5}{8}$	13.2645	3.7358	1.3556	9,417
$5\frac{15}{16}$	$3\frac{11}{16}$	13.4391	3.7850	1.3650	9,295
6	$3\frac{3}{4}$	13.6136	3.8341	1.3745	9,176
$6\frac{1}{16}$	$3\frac{13}{16}$	13.7881	3.8833	1.3842	9,059
$6\frac{1}{8}$	$3\frac{7}{8}$	13.9627	3.9324	1.3940	8,946
$6\frac{3}{16}$	$3\frac{15}{16}$	14.1372	3.9816	1.4039	8,836
$6\frac{1}{4}$	4	14.3117	4.0307	1.4139	8,728
$6\frac{5}{16}$	$4\frac{1}{16}$	14.4863	4.0799	1.4241	8,623
$6\frac{3}{8}$	$4\frac{1}{8}$	14.6608	4.1290	1.4344	8,520
$6\frac{7}{16}$	$4\frac{3}{16}$	14.8353	4.1782	1.4448	8,420
$6\frac{1}{2}$	$4\frac{1}{4}$	15.0099	4.2274	1.4553	8,322
$6\frac{9}{16}$	$4\frac{5}{16}$	15.1844	4.2765	1.4660	8,226
$6\frac{5}{8}$	$4\frac{3}{8}$	15.3589	4.3257	1.4767	8,133
$6\frac{11}{16}$	$4\frac{7}{16}$	15.5335	4.3748	1.4876	8,042
$6\frac{3}{4}$	$4\frac{1}{2}$	15.7080	4.4240	1.4986	7,952
$6\frac{13}{16}$	$4\frac{9}{16}$	15.8825	4.4731	1.5098	7,865
$6\frac{7}{8}$	$4\frac{5}{8}$	16.0571	4.5223	1.5211	7,779
$6\frac{15}{16}$	$4\frac{11}{16}$	16.2316	4.5714	1.5324	7,696
7	$4\frac{3}{4}$	16.4061	4.6206	1.5440	7,614
$7\frac{1}{16}$	$4\frac{13}{16}$	16.5807	4.6698	1.5556	7,534
$7\frac{1}{8}$	$4\frac{7}{8}$	16.7552	4.7189	1.5674	7,455
$7\frac{3}{16}$	$4\frac{15}{16}$	16.9297	4.7681	1.5792	7,378
$7\frac{1}{4}$	5	17.1043	4.8172	1.5912	7,303
$7\frac{5}{16}$	$5\frac{1}{16}$	17.2788	4.8664	1.6034	7,229

Helical Bar.

MACHINERY AND RAILROAD. — HEAVY STEEL SPRING TABLE.

Diameter of Bar $1\frac{1}{8}$". — Continued.

Outside Diameter.	Inside Diameter.	Length per Inch of Solid Height.	Weight per Inch of Solid Height.	Free Height per Inch of Solid Height.	Capacity.
$7\frac{3}{8}$	$5\frac{1}{8}$	17.4533	4.9155	1.6156	7,157
$7\frac{7}{16}$	$5\frac{3}{16}$	17.6279	4.9647	1.6280	7,086
$7\frac{1}{2}$	$5\frac{1}{4}$	17.8024	5.0138	1.6405	7,017
$7\frac{9}{16}$	$5\frac{5}{16}$	17.9769	5.0630	1.6531	6,949
$7\frac{5}{8}$	$5\frac{3}{8}$	18.1515	5.1122	1.6659	6,882
$7\frac{11}{16}$	$5\frac{7}{16}$	18.3260	5.1613	1.6787	6,816
$7\frac{3}{4}$	$5\frac{1}{2}$	18.5005	5.2105	1.6917	6,752
$7\frac{13}{16}$	$5\frac{9}{16}$	18.6751	5.2596	1.7048	6,689
$7\frac{7}{8}$	$5\frac{5}{8}$	18.8495	5.3088	1.7181	6,627
$7\frac{15}{16}$	$5\frac{11}{16}$	19.0241	5.3579	1.7314	6,566
8	$5\frac{3}{4}$	19.1987	5.4071	1.7449	6,500
$8\frac{1}{16}$	$5\frac{13}{16}$	19.3732	5.4562	1.7585	6,448
$8\frac{1}{8}$	$5\frac{7}{8}$	19.5477	5.5054	1.7722	6,390
$8\frac{5}{16}$	$5\frac{15}{16}$	19.7223	5.5545	1.7861	6,334
$8\frac{1}{4}$	6	19.8968	5.6037	1.8001	6,278
$8\frac{5}{16}$	$6\frac{1}{16}$	20.0713	5.6529	1.8142	6,223
$8\frac{3}{8}$	$6\frac{1}{8}$	20.2459	5.7020	1.8284	6,170
$8\frac{7}{16}$	$6\frac{3}{16}$	20.4204	5.7512	1.8427	6,117
$8\frac{1}{2}$	$6\frac{1}{4}$	20.5949	5.8003	1.8572	6,065
$8\frac{9}{16}$	$6\frac{5}{16}$	20.7695	5.8495	1.8718	6,014
$8\frac{5}{8}$	$6\frac{3}{8}$	20.9440	5.8986	1.8865	5,964
$8\frac{11}{16}$	$6\frac{7}{16}$	21.1185	5.9478	1.9013	5,915
$8\frac{3}{4}$	$6\frac{1}{2}$	21.2931	5.9969	1.9163	5,866
$8\frac{13}{16}$	$6\frac{9}{16}$	21.4676	6.0461	1.9314	5,819
$8\frac{7}{8}$	$6\frac{5}{8}$	21.6421	6.0953	1.9466	5,772
$8\frac{15}{16}$	$6\frac{11}{16}$	21.8167	6.1444	1.9619	5,726
9	$6\frac{3}{4}$	21.9912	6.1936	1.9774	5,680
$9\frac{1}{16}$	$6\frac{13}{16}$	22.1657	6.2427	1.9929	5,635
$9\frac{1}{8}$	$6\frac{7}{8}$	22.3403	6.2919	2.0086	5,591
$9\frac{3}{16}$	$6\frac{15}{16}$	22.5148	6.3410	2.0245	5,548
$9\frac{1}{4}$	7	22.6893	6.3902	2.0404	5,505
$9\frac{5}{16}$	$7\frac{1}{16}$	22.8639	6.4393	2.0565	5,463
$9\frac{3}{8}$	$7\frac{1}{8}$	23.0384	6.4885	2.0727	5,422
$9\frac{7}{16}$	$7\frac{3}{16}$	23.2129	6.5377	2.0890	5,381
$9\frac{1}{2}$	$7\frac{1}{4}$	23.3875	6.5868	2.1054	5,341
$9\frac{9}{16}$	$7\frac{5}{16}$	23.5620	6.6360	2.1220	5,301
$9\frac{5}{8}$	$7\frac{3}{8}$	23.7365	6.6851	2.1386	5,262
$9\frac{11}{16}$	$7\frac{7}{16}$	23.9111	6.7343	2.1555	5,224
$9\frac{3}{4}$	$7\frac{1}{2}$	24.0856	6.7834	2.1724	5,186

Helical Bar.

MACHINERY AND RAILROAD. — HEAVY STEEL SPRING TABLE.

Diameter of Bar $1\frac{1}{8}$". — Continued.

Outside Diameter.	Inside Diameter.	Length per Inch of Solid Height.	Weight per Inch of Solid Height.	Free Height per Inch of Solid Height.	Capacity.
$9\frac{13}{16}$	$7\frac{9}{16}$	24.2601	6.8326	2.1894	5,149
$9\frac{7}{8}$	$7\frac{5}{8}$	24.4347	6.8817	2.2066	5,112
$9\frac{15}{16}$	$7\frac{11}{16}$	24.6092	6.9309	2.2239	5,076
10	$7\frac{3}{4}$	24.7837	6.9801	2.2413	5,040
$10\frac{1}{16}$	$7\frac{13}{16}$	24.9583	7.0292	2.2589	5,005
$10\frac{1}{8}$	$7\frac{7}{8}$	25.1328	7.0784	2.2765	4,970
$10\frac{3}{16}$	$7\frac{15}{16}$	25.3073	7.1275	2.2943	4,936
$10\frac{1}{4}$	8	25.4819	7.1767	2.3122	4,902
$10\frac{5}{16}$	$8\frac{1}{16}$	25.6564	7.2258	2.3303	4,869
$10\frac{3}{8}$	$8\frac{1}{8}$	25.8309	7.2750	2.3484	4,836
$10\frac{7}{16}$	$8\frac{3}{16}$	26.0055	7.3241	2.3667	4,803
$10\frac{1}{2}$	$8\frac{1}{4}$	26.1800	7.3733	2.3851	4,771
$10\frac{9}{16}$	$8\frac{5}{16}$	26.3545	7.4225	2.4037	4,740
$10\frac{5}{8}$	$8\frac{3}{8}$	26.5291	7.4716	2.4223	4,709
$10\frac{11}{16}$	$8\frac{7}{16}$	26.7036	7.5208	2.4410	4,678
$10\frac{3}{4}$	$8\frac{1}{2}$	26.8781	7.5699	2.4600	4,647
$10\frac{13}{16}$	$8\frac{9}{16}$	27.0527	7.6191	2.4790	4,617
$10\frac{7}{8}$	$8\frac{5}{8}$	27.2272	7.6682	2.4982	4,588
$10\frac{15}{16}$	$8\frac{11}{16}$	27.4017	7.7174	2.5174	4,559
11	$8\frac{3}{4}$	27.5763	7.7665	2.5368	4,530
$11\frac{1}{16}$	$8\frac{13}{16}$	27.7508	7.8157	2.5563	4,501
$11\frac{1}{8}$	$8\frac{7}{8}$	27.9253	7.8648	2.5760	4,473
$11\frac{3}{16}$	$8\frac{15}{16}$	28.0999	7.9140	2.5957	4,445
$11\frac{1}{4}$	9	28.2744	7.9632	2.6156	4,418

Diameter of Bar $1\frac{3}{16}$".

$4\frac{1}{4}$	$2\frac{3}{8}$	9.4248	2.9575	1.1795	14,767
$4\frac{13}{16}$	$2\frac{7}{16}$	9.5901	3.0094	1.1859	14,513
$4\frac{7}{8}$	$2\frac{1}{2}$	9.7555	3.0613	1.1923	14,267
$4\frac{15}{16}$	$2\frac{9}{16}$	9.9208	3.1132	1.1989	14,029
5	$2\frac{5}{8}$	10.0862	3.1651	1.2056	13,799
$5\frac{1}{16}$	$2\frac{11}{16}$	10.2515	3.2169	1.2124	13,576
$5\frac{1}{16}$	$2\frac{3}{4}$	10.4169	3.2688	1.2193	13,361
$5\frac{9}{16}$	$2\frac{13}{16}$	10.5822	3.3207	1.2263	13,152
$5\frac{1}{4}$	$2\frac{7}{8}$	10.7476	3.3726	1.2334	12,950
$5\frac{5}{16}$	$2\frac{15}{16}$	10.9129	3.4245	1.2407	12,753

Helical Bar.

MACHINERY AND RAILROAD. — HEAVY STEEL SPRING TABLE.

Diameter of Bar $1\frac{3}{16}$". — Continued.

Outside Diameter.	Inside Diameter.	Length per Inch of Solid Height.	Weight per Inch of Solid Height.	Free Height per Inch of Solid Height.	Capacity.
$5\frac{3}{16}$	3	11.0783	3.4764	1.2480	12,563
$5\frac{7}{16}$	$3\frac{1}{16}$	11.2436	3.5283	1.2555	12,378
$5\frac{1}{2}$	$3\frac{1}{8}$	11.4090	3.5801	1.2631	12,199
$5\frac{9}{16}$	$3\frac{3}{16}$	11.5743	3.6320	1.2717	12,025
$5\frac{5}{8}$	$3\frac{1}{4}$	11.7397	3.6839	1.2785	11,855
$5\frac{11}{16}$	$3\frac{5}{16}$	11.9050	3.7358	1.2864	11,691
$5\frac{3}{4}$	$3\frac{3}{8}$	12.0704	3.7877	1.2944	11,530
$5\frac{13}{16}$	$3\frac{7}{16}$	12.2357	3.8396	1.3026	11,375
$5\frac{7}{8}$	$3\frac{1}{2}$	12.4011	3.8915	1.3108	11,223
$5\frac{15}{16}$	$3\frac{9}{16}$	12.5664	3.9433	1.3191	11,075
6	$3\frac{5}{8}$	12.7317	3.9952	1.3276	10,932
$6\frac{1}{16}$	$3\frac{11}{16}$	12.8971	4.0471	1.3362	10,791
$6\frac{1}{8}$	3	13.0624	4.0990	1.3448	10,655
$6\frac{3}{16}$	$3\frac{13}{16}$	13.2278	4.1509	1.3536	10,522
$6\frac{1}{4}$	$3\frac{7}{8}$	13.3931	4.2028	1.3625	10,392
$6\frac{5}{16}$	$3\frac{15}{16}$	13.5585	4.2547	1.3715	10,265
$6\frac{3}{8}$	4	13.7238	4.3066	1.3806	10,141
$6\frac{7}{16}$	$4\frac{1}{16}$	13.8892	4.3584	1.3899	10,021
$6\frac{1}{2}$	$4\frac{1}{8}$	14.0545	4.4103	1.3992	9,902
$6\frac{9}{16}$	$4\frac{3}{16}$	14.2199	4.4622	1.4086	9,788
$6\frac{5}{8}$	$4\frac{1}{4}$	14.3852	4.5141	1.4182	9,675
$6\frac{11}{16}$	$4\frac{5}{16}$	14.5506	4.5660	1.4279	9,565
$6\frac{3}{4}$	$4\frac{3}{8}$	14.7159	4.6179	1.4377	9,458
$6\frac{13}{16}$	$4\frac{7}{16}$	14.8813	4.6698	1.4475	9,353
$6\frac{7}{8}$	$4\frac{1}{2}$	15.0466	4.7216	1.4575	9,250
$6\frac{15}{16}$	$4\frac{9}{16}$	15.2120	4.7735	1.4677	9,149
7	$4\frac{5}{8}$	15.3773	4.8254	1.4779	9,051
$7\frac{1}{16}$	$4\frac{11}{16}$	15.5427	4.8773	1.4882	8,955
$7\frac{1}{8}$	$4\frac{3}{4}$	15.7080	4.9292	1.4987	8,860
$7\frac{3}{16}$	$4\frac{13}{16}$	15.8733	4.9811	1.5092	8,768
$7\frac{1}{4}$	$4\frac{7}{8}$	16.0387	5.0330	1.5199	8,678
$7\frac{5}{16}$	$4\frac{15}{16}$	16.2040	5.0848	1.5306	8,589
$7\frac{3}{8}$	5	16.3694	5.1367	1.5415	8,502
$7\frac{7}{16}$	$5\frac{1}{16}$	16.5347	5.1886	1.5525	8,417
$7\frac{1}{2}$	$5\frac{1}{8}$	16.7001	5.2405	1.5636	8,334
$7\frac{9}{16}$	$5\frac{3}{16}$	16.8654	5.2924	1.5748	8,252
$7\frac{5}{8}$	$5\frac{1}{4}$	17.0308	5.3443	1.5862	8,172
$7\frac{11}{16}$	$5\frac{5}{16}$	17.1961	5.3962	1.5976	8,094
$7\frac{3}{4}$	$5\frac{3}{8}$	17.3615	5.4480	1.6092	8,016

Helical Bar.

MACHINERY AND RAILROAD. — HEAVY STEEL SPRING TABLE.

Diameter of Bar $1\frac{1}{16}$". — Continued.

Outside Diameter.	Inside Diameter.	Length per Inch of Solid Height.	Weight per Inch of Solid Height.	Free Height per Inch of Solid Height.	Capacity.
$7\frac{13}{16}$	$5\frac{7}{16}$	17.5268	5.4999	1.6208	7,941
$7\frac{7}{8}$	$5\frac{1}{2}$	17.6922	5.5518	1.6326	7,867
$7\frac{15}{16}$	$5\frac{9}{16}$	17.8575	5.6037	1.6545	7,794
8	$5\frac{5}{8}$	18.0229	5.6556	1.6565	7,722
$8\frac{1}{16}$	$5\frac{11}{16}$	18.1882	5.7075	1.6686	7,652
$8\frac{1}{8}$	$5\frac{3}{4}$	18.3536	5.7594	1.6807	7,583
$8\frac{3}{16}$	$5\frac{13}{16}$	18.5189	5.8112	1.6931	7,515
$8\frac{1}{4}$	$5\frac{7}{8}$	18.6843	5.8631	1.7055	7,499
$8\frac{5}{16}$	$5\frac{15}{16}$	18.8496	5.9150	1.7181	7,384
$8\frac{3}{8}$	6	19.0149	5.9669	1.7307	7,319
$8\frac{7}{16}$	$6\frac{1}{16}$	19.1803	6.0188	1.7435	7,256
$8\frac{1}{2}$	$6\frac{1}{8}$	19.3456	6.0707	1.7563	7,194
$8\frac{9}{16}$	$6\frac{3}{16}$	19.5110	6.1226	1.7693	7,133
$8\frac{5}{8}$	$6\frac{1}{4}$	19.6763	6.1745	1.7824	7,073
$8\frac{11}{16}$	$6\frac{5}{16}$	19.8417	6.2263	1.7956	7,014
$8\frac{3}{4}$	$6\frac{3}{8}$	20.0070	6.2782	1.8089	6,956
$8\frac{13}{16}$	$6\frac{7}{16}$	20.1724	6.3301	1.8224	6,899
$8\frac{7}{8}$	$6\frac{1}{2}$	20.3377	6.3820	1.8359	6,843
$8\frac{15}{16}$	$6\frac{9}{16}$	20.5031	6.4339	1.8496	6,788
9	$6\frac{5}{8}$	20.6684	6.4858	1.8633	6,734
$9\frac{1}{16}$	$6\frac{11}{16}$	20.8338	6.5377	1.8772	6,680
$9\frac{1}{8}$	$6\frac{3}{4}$	20.9991	6.5895	1.8912	6,628
$9\frac{3}{16}$	$6\frac{13}{16}$	21.1645	6.6414	1.9053	6,576
$9\frac{1}{4}$	$6\frac{7}{8}$	21.3298	6.6933	1.9195	6,525
$9\frac{5}{16}$	$6\frac{15}{16}$	21.4952	6.7452	1.9338	6,475
$9\frac{3}{8}$	7	21.6605	6.7971	1.9482	6,425
$9\frac{7}{16}$	$7\frac{1}{16}$	21.8259	6.8490	1.9627	6,377
$9\frac{1}{2}$	$7\frac{1}{8}$	21.9912	6.9009	1.9774	6,329
$9\frac{9}{16}$	$7\frac{3}{16}$	22.1565	6.9527	1.9921	6,282
$9\frac{5}{8}$	$7\frac{1}{4}$	22.3219	7.0046	2.0070	6,235
$9\frac{11}{16}$	$7\frac{5}{16}$	22.4872	7.0565	2.0219	6,189
$9\frac{3}{4}$	$7\frac{3}{8}$	22.6526	7.1084	2.0370	6,144
$9\frac{13}{16}$	$7\frac{7}{16}$	22.8179	7.1603	2.0522	6,099
$9\frac{7}{8}$	$7\frac{1}{2}$	22.9833	7.2122	2.0675	6,056
$9\frac{15}{16}$	$7\frac{9}{16}$	23.1486	7.2641	2.0829	6,012
10	$7\frac{5}{8}$	23.3140	7.3159	2.0985	5,970
$10\frac{1}{16}$	$7\frac{11}{16}$	23.4793	7.3678	2.1141	5,928
$10\frac{1}{8}$	$7\frac{3}{4}$	23.6447	7.4197	2.1299	5,886
$10\frac{3}{16}$	$7\frac{13}{16}$	23.8100	7.4716	2.1457	5,845

Helical Bar.

MACHINERY AND RAILROAD. — HEAVY STEEL SPRING TABLE.

Diameter of Bar $1\frac{3}{16}$". — Continued.

Outside Diameter.	Inside Diameter.	Length per Inch of Solid Height.	Weight per Inch of Solid Height.	Free Height per Inch of Solid Height.	Capacity.
$10\frac{1}{4}$	$7\frac{7}{8}$	23.9754	7.5235	2.1617	5,805
$10\frac{5}{16}$	$7\frac{15}{16}$	24.1407	7.5754	2.1778	5,765
$10\frac{3}{8}$	8	24.3061	7.6273	2.1939	5,726
$10\frac{7}{16}$	$8\frac{1}{16}$	24.4714	7.6792	2.2102	5,687
$10\frac{1}{2}$	$8\frac{1}{8}$	24.6368	7.7310	2.2267	5,649
$10\frac{9}{16}$	$8\frac{3}{16}$	24.8021	7.7829	2.2432	5,612
$10\frac{5}{8}$	$8\frac{1}{4}$	24.9675	7.8348	2.2598	5,574
$10\frac{11}{16}$	$8\frac{5}{16}$	25.1328	7.8867	2.2765	5,538
$10\frac{3}{4}$	$8\frac{3}{8}$	25.2981	7.9386	2.2934	5,501
$10\frac{13}{16}$	$8\frac{7}{16}$	25.4635	7.9905	2.3104	5,466
$10\frac{7}{8}$	$8\frac{1}{2}$	25.6288	8.0424	2.3274	5,431
$10\frac{15}{16}$	$8\frac{9}{16}$	25.7942	8.0942	2.3446	5,396
11	$8\frac{5}{8}$	25.9595	8.1461	2.3619	5,361
$11\frac{1}{16}$	$8\frac{11}{16}$	26.1249	8.1980	2.3793	5,327
$11\frac{1}{8}$	$8\frac{3}{4}$	26.2902	8.2499	2.3968	5,294
$11\frac{3}{16}$	$8\frac{13}{16}$	26.4556	8.3018	2.4145	5,261
$11\frac{1}{4}$	$8\frac{7}{8}$	26.6209	8.3537	2.4322	5,228
$11\frac{5}{16}$	$8\frac{15}{16}$	26.7863	8.4056	2.4500	5,196
$11\frac{3}{8}$	9	26.9516	8.4574	2.4680	5,164
$11\frac{7}{16}$	$9\frac{1}{16}$	27.1170	8.5093	2.4861	5,132
$11\frac{1}{2}$	$9\frac{1}{8}$	27.2823	8.5612	2.5042	5,101
$11\frac{9}{16}$	$9\frac{3}{16}$	27.4477	8.6131	2.5225	5,071
$11\frac{5}{8}$	$9\frac{1}{4}$	27.6130	8.6650	2.5409	5,040
$11\frac{11}{16}$	$9\frac{5}{16}$	27.7784	8.7169	2.5594	5,010
$11\frac{3}{4}$	$9\frac{3}{8}$	27.9437	8.7688	2.5781	4,981
$11\frac{13}{16}$	$9\frac{7}{16}$	28.1091	8.8206	2.5968	4,951
$11\frac{7}{8}$	$9\frac{1}{2}$	28.2744	8.8725	2.6156	4,922

Diameter of Bar $1\frac{1}{4}$".

5	$2\frac{1}{2}$	9.4248	3.2770	1.1795	16,363
$5\frac{1}{16}$	$2\frac{9}{16}$	9.5819	3.3316	1.1855	16,094
$5\frac{1}{8}$	$2\frac{5}{8}$	9.7390	3.3863	1.1917	15,835
$5\frac{3}{16}$	$2\frac{11}{16}$	9.8960	3.4409	1.1979	15,583
$5\frac{1}{4}$	$2\frac{3}{4}$	10.0531	3.4955	1.2042	15,340
$5\frac{5}{16}$	$2\frac{13}{16}$	10.2102	3.5501	1.2107	15,104
$5\frac{3}{8}$	$2\frac{7}{8}$	10.3673	3.6047	1.2172	14,875
$5\frac{7}{16}$	$2\frac{15}{16}$	10.5244	3.6593	1.2238	14,653

Helical Bar.

MACHINERY AND RAILROAD. — HEAVY STEEL SPRING TABLE.

Diameter of Bar $1\frac{1}{2}$". — Continued.

Outside Diameter.	Inside Diameter.	Length per Inch of Solid Height.	Weight per Inch of Solid Height.	Free Height per Inch of Solid Height.	Capacity.
$5\frac{1}{2}$	3	10.6814	3.7140	1.2306	14,437
$5\frac{9}{16}$	$3\frac{1}{16}$	10.8385	3.7686	1.2374	14,228
$5\frac{5}{8}$	$3\frac{1}{8}$	10.9956	3.8232	1.2443	14,025
$5\frac{11}{16}$	$3\frac{3}{16}$	11.1527	3.8778	1.2514	13,827
$5\frac{3}{4}$	$3\frac{1}{4}$	11.3098	3.9324	1.2585	13,635
$5\frac{13}{16}$	$3\frac{5}{16}$	11.4668	3.9870	1.2657	13,449
$5\frac{7}{8}$	$3\frac{3}{8}$	11.6239	4.0417	1.2731	13,267
$5\frac{15}{16}$	$3\frac{7}{16}$	11.7810	4.0963	1.2805	13,090
6	$3\frac{1}{2}$	11.9381	4.1509	1.2880	12,918
$6\frac{1}{16}$	$3\frac{9}{16}$	12.0952	4.2055	1.2956	12,750
$6\frac{1}{8}$	$3\frac{5}{8}$	12.2522	4.2601	1.3034	12,587
$6\frac{3}{16}$	$3\frac{11}{16}$	12.4093	4.3147	1.3112	12,427
$6\frac{1}{4}$	$3\frac{3}{4}$	12.5664	4.3694	1.3191	12,272
$6\frac{5}{16}$	$3\frac{13}{16}$	12.7235	4.4240	1.3272	12,120
$6\frac{3}{8}$	$3\frac{7}{8}$	12.8806	4.4786	1.3353	11,973
$6\frac{7}{16}$	$3\frac{15}{16}$	13.0376	4.5332	1.3435	11,828
$6\frac{1}{2}$	4	13.1947	4.5878	1.3518	11,688
$6\frac{9}{16}$	$4\frac{1}{16}$	13.3518	4.6424	1.3603	11,550
$6\frac{5}{8}$	$4\frac{1}{8}$	13.5089	4.6971	1.3688	11,416
$6\frac{11}{16}$	$4\frac{3}{16}$	13.6660	4.7517	1.3774	11,285
$6\frac{3}{4}$	$4\frac{1}{4}$	13.8230	4.8063	1.3862	11,156
$6\frac{13}{16}$	$4\frac{5}{16}$	13.9801	4.8609	1.3950	11,031
$6\frac{7}{8}$	$4\frac{3}{8}$	14.1372	4.9155	1.4029	10,908
$6\frac{15}{16}$	$4\frac{7}{16}$	14.2943	4.9701	1.4119	10,788
7	$4\frac{1}{2}$	14.4514	5.0248	1.4211	10,671
$7\frac{1}{16}$	$4\frac{9}{16}$	14.6084	5.0794	1.4303	10,556
$7\frac{1}{8}$	$4\frac{5}{8}$	14.7655	5.1340	1.4396	10,444
$7\frac{3}{16}$	$4\frac{11}{16}$	14.9226	5.1886	1.4490	10,334
$7\frac{1}{4}$	$4\frac{3}{4}$	15.0797	5.2432	1.4586	10,227
$7\frac{5}{16}$	$4\frac{13}{16}$	15.2368	5.2978	1.4682	10,121
$7\frac{3}{8}$	$4\frac{7}{8}$	15.3938	5.3525	1.4779	10,018
$7\frac{7}{16}$	$4\frac{15}{16}$	15.5509	5.4071	1.4877	9,917
$7\frac{1}{2}$	5	15.7080	5.4617	1.4977	9,818
$7\frac{9}{16}$	$5\frac{1}{16}$	15.8651	5.5163	1.5077	9,720
$7\frac{5}{8}$	$5\frac{1}{8}$	16.0222	5.5709	1.5178	9,625
$7\frac{11}{16}$	$5\frac{3}{16}$	16.1792	5.6256	1.5280	9,532
$7\frac{3}{4}$	$5\frac{1}{4}$	16.3363	5.6802	1.5383	9,440
$7\frac{13}{16}$	$5\frac{5}{16}$	16.4934	5.7348	1.5488	9,350
$7\frac{7}{8}$	$5\frac{3}{8}$	16.6505	5.7894	1.5593	9,262

Helical Bar.

MACHINERY AND RAILROAD. — HEAVY STEEL SPRING TABLE.

Diameter of Bar $1\frac{1}{4}$". — Continued.

Outside Diameter.	Inside Diameter.	Length per Inch of Solid Height.	Weight per Inch of Solid Height.	Free Height per Inch of Solid Height.	Capacity.
$7\frac{15}{16}$	$5\frac{7}{16}$	16.8076	5.8440	1.5699	9,175
8	$5\frac{1}{2}$	16.9646	5.8986	1.5806	9,090
$8\frac{1}{16}$	$5\frac{9}{16}$	17.1217	5.9533	1.5914	9,007
$8\frac{1}{8}$	$5\frac{5}{8}$	17.2788	6.0079	1.6024	8,925
$8\frac{3}{16}$	$5\frac{11}{16}$	17.4359	6.0625	1.6134	8,845
$8\frac{1}{4}$	$5\frac{3}{4}$	17.5930	6.1171	1.6245	8,766
$8\frac{5}{16}$	$5\frac{13}{16}$	17.7500	6.1717	1.6357	8,688
$8\frac{3}{8}$	$5\frac{7}{8}$	17.9071	6.2263	1.6470	8,612
$8\frac{7}{16}$	$5\frac{15}{16}$	18.0642	6.2810	1.6585	8,537
$8\frac{1}{2}$	6	18.2213	6.3356	1.6700	8,463
$8\frac{9}{16}$	$6\frac{1}{16}$	18.3784	6.3902	1.6826	8,391
$8\frac{5}{8}$	$6\frac{1}{8}$	18.5354	6.4448	1.6943	8,319
$8\frac{11}{16}$	$6\frac{3}{16}$	18.6925	6.4994	1.7061	8,250
$8\frac{3}{4}$	$6\frac{1}{4}$	18.8496	6.5540	1.7181	8,181
$8\frac{13}{16}$	$6\frac{5}{16}$	19.0067	6.6087	1.7300	8,114
$8\frac{7}{8}$	$6\frac{3}{8}$	19.1638	6.6633	1.7422	8,047
$8\frac{15}{16}$	$6\frac{7}{16}$	19.3208	6.7179	1.7544	7,982
9	$6\frac{1}{2}$	19.4779	6.7725	1.7667	7,917
$9\frac{1}{16}$	$6\frac{9}{16}$	19.6350	6.8271	1.7791	7,854
$9\frac{1}{8}$	$6\frac{5}{8}$	19.7921	6.8817	1.7917	7,792
$9\frac{3}{16}$	$6\frac{11}{16}$	19.9492	6.9364	1.8043	7,730
$9\frac{1}{4}$	$6\frac{3}{4}$	20.1062	6.9910	1.8170	7,670
$9\frac{5}{16}$	$6\frac{13}{16}$	20.2633	7.0456	1.8298	7,610
$9\frac{3}{8}$	$6\frac{7}{8}$	20.4204	7.1002	1.8427	7,552
$9\frac{7}{16}$	$6\frac{15}{16}$	20.5775	7.1548	1.8557	7,494
$9\frac{1}{2}$	7	20.7346	7.2094	1.8688	7,438
$9\frac{9}{16}$	$7\frac{1}{16}$	20.8916	7.2641	1.8821	7,382
$9\frac{5}{8}$	$7\frac{1}{8}$	21.0487	7.3187	1.8954	7,326
$9\frac{11}{16}$	$7\frac{3}{16}$	21.2058	7.3733	1.9087	7,272
$9\frac{3}{4}$	$7\frac{1}{4}$	21.3629	7.4279	1.9223	7,219
$9\frac{13}{16}$	$7\frac{5}{16}$	21.5200	7.4825	1.9359	7,166
$9\frac{7}{8}$	$7\frac{3}{8}$	21.6770	7.5371	1.9496	7,114
$9\frac{15}{16}$	$7\frac{7}{16}$	21.8341	7.5918	1.9634	7,063
10	$7\frac{1}{2}$	21.9912	7.6464	1.9774	7,013
$10\frac{1}{16}$	$7\frac{9}{16}$	22.1483	7.7010	1.9914	6,963
$10\frac{1}{8}$	$7\frac{5}{8}$	22.3054	7.7556	2.0055	6,914
$10\frac{3}{16}$	$7\frac{11}{16}$	22.4624	7.8102	2.0197	6,865
$10\frac{1}{4}$	$7\frac{3}{4}$	22.6195	7.8648	2.0340	6,818
$10\frac{5}{16}$	$7\frac{13}{16}$	22.7766	7.9195	2.0484	6,771

Helical Bar.

MACHINERY AND RAILROAD. — HEAVY STEEL SPRING TABLE.

Diameter of Bar $1\frac{1}{4}$". — Continued.

Outside Diameter.	Inside Diameter.	Length per Inch of Solid Height.	Weight per Inch of Solid Height.	Free Height per Inch of Solid Height.	Capacity.
$10\frac{3}{8}$	$7\frac{7}{8}$	22.9337	7.9741	2.0629	6,724
$10\frac{7}{16}$	$7\frac{15}{16}$	23.0908	8.0287	2.0775	6,679
$10\frac{1}{2}$	8	23.2478	8.0833	2.0922	6,633
$10\frac{9}{16}$	$8\frac{1}{16}$	23.4049	8.1379	2.1071	6,589
$10\frac{5}{8}$	$8\frac{1}{8}$	23.5620	8.1926	2.1220	6,545
$10\frac{11}{16}$	$8\frac{3}{16}$	23.7191	8.2472	2.1369	6,502
$10\frac{3}{4}$	$8\frac{1}{4}$	23.8762	8.3018	2.1521	6,459
$10\frac{13}{16}$	$8\frac{5}{16}$	24.0332	8.3564	2.1673	6,417
$10\frac{7}{8}$	$8\frac{3}{8}$	24.1903	8.4110	2.1826	6,375
$10\frac{15}{16}$	$8\frac{7}{16}$	24.3474	8.4656	2.1980	6,334
11	$8\frac{1}{2}$	24.5045	8.5203	2.2135	6,293
$11\frac{1}{16}$	$8\frac{9}{16}$	24.6616	8.5749	2.2291	6,253
$11\frac{1}{8}$	$8\frac{5}{8}$	24.8186	8.6295	2.2448	6,214
$11\frac{3}{16}$	$8\frac{11}{16}$	24.9757	8.6841	2.2606	6,175
$11\frac{1}{4}$	$8\frac{3}{4}$	25.1328	8.7387	2.2765	6,136
$11\frac{5}{16}$	$8\frac{13}{16}$	25.2899	8.7933	2.2926	6,098
$11\frac{3}{8}$	$8\frac{7}{8}$	25.4470	8.8480	2.3087	6,060
$11\frac{7}{16}$	$8\frac{15}{16}$	25.6040	8.9026	2.3249	6,023
$11\frac{1}{2}$	9	25.7611	8.9572	2.3412	5,986
$11\frac{9}{16}$	$9\frac{1}{16}$	25.9182	9.0118	2.3576	5,950
$11\frac{5}{8}$	$9\frac{1}{8}$	26.0753	9.0664	2.3741	5,914
$11\frac{11}{16}$	$9\frac{3}{16}$	26.2324	9.1210	2.3907	5,879
$11\frac{3}{4}$	$9\frac{1}{4}$	26.3894	9.1757	2.4074	5,844
$11\frac{13}{16}$	$9\frac{5}{16}$	26.5465	9.2303	2.4242	5,809
$11\frac{7}{8}$	$9\frac{3}{8}$	26.7036	9.2849	2.4411	5,775
$11\frac{15}{16}$	$9\frac{7}{16}$	26.8607	9.3395	2.4581	5,741
12	$9\frac{1}{2}$	27.0178	9.3941	2.4752	5,708
$12\frac{1}{16}$	$9\frac{9}{16}$	27.1748	9.4487	2.4924	5,675
$12\frac{1}{8}$	$9\frac{5}{8}$	27.3319	9.5034	2.5097	5,642
$12\frac{3}{16}$	$9\frac{11}{16}$	27.4890	9.5580	2.5271	5,610
$12\frac{1}{4}$	$9\frac{3}{4}$	27.6461	9.6126	2.5446	5,578
$12\frac{5}{16}$	$9\frac{13}{16}$	27.8032	9.6672	2.5622	5,547
$12\frac{3}{8}$	$9\frac{7}{8}$	27.9602	9.7218	2.5799	5,515
$12\frac{7}{16}$	$9\frac{15}{16}$	28.1173	9.7764	2.5977	5,485
$12\frac{1}{2}$	10	28.2744	9.8311	2.6156	5,454

Helical Bar.

MACHINERY AND RAILROAD. — HEAVY STEEL SPRING TABLE.

Diameter of Bar $1\frac{5}{16}$".

Outside Diameter.	Inside Diameter.	Length per Inch of Solid Height.	Weight per Inch of Solid Height.	Free Height per Inch of Solid Height.	Capacity.
$5\frac{1}{4}$	$2\frac{5}{8}$	9.4248	3.6129	1.1795	18,040
$5\frac{5}{16}$	$2\frac{11}{16}$	9.5744	3.6703	1.1853	17,758
$5\frac{3}{8}$	$2\frac{3}{4}$	9.7240	3.7276	1.1911	17,485
$5\frac{7}{16}$	$2\frac{13}{16}$	9.8736	3.7850	1.1970	17,220
$5\frac{1}{2}$	$2\frac{7}{8}$	10.0232	3.8423	1.2030	16,963
$5\frac{9}{16}$	$2\frac{15}{16}$	10.1728	3.8997	1.2091	16,713
$5\frac{5}{8}$	2	10.3224	3.9570	1.2153	16,471
$5\frac{11}{16}$	$3\frac{1}{16}$	10.4720	4.0143	1.2216	16,236
$5\frac{3}{4}$	$3\frac{1}{8}$	10.6216	4.0717	1.2280	16,007
$5\frac{13}{16}$	$3\frac{3}{16}$	10.7712	4.1290	1.2345	15,785
$5\frac{7}{8}$	$3\frac{1}{4}$	10.9208	4.1864	1.2410	15,568
$5\frac{15}{16}$	$3\frac{5}{16}$	11.0704	4.2437	1.2476	15,358
6	$3\frac{3}{8}$	11.2200	4.3011	1.2544	15,153
$6\frac{1}{16}$	$3\frac{7}{16}$	11.3696	4.3584	1.2612	14,954
$6\frac{1}{8}$	$3\frac{1}{2}$	11.5192	4.4158	1.2682	14,760
$6\frac{5}{16}$	$3\frac{9}{16}$	11.6688	4.4731	1.2752	14,571
$6\frac{1}{4}$	$3\frac{5}{8}$	11.8184	4.5305	1.2823	14,386
$6\frac{5}{16}$	$3\frac{11}{16}$	11.9680	4.5878	1.2895	14,206
$6\frac{3}{8}$	$3\frac{3}{4}$	12.1176	4.6452	1.2967	14,031
$6\frac{7}{16}$	$3\frac{13}{16}$	12.2672	4.7025	1.3041	13,860
$6\frac{1}{2}$	$3\frac{7}{8}$	12.4168	4.7599	1.3116	13,693
$6\frac{9}{16}$	$3\frac{15}{16}$	12.5664	4.8172	1.3193	13,530
$6\frac{5}{8}$	4	12.7160	4.8746	1.3268	13,371
$6\frac{11}{16}$	$4\frac{1}{16}$	12.8656	4.9319	1.3345	13,215
$6\frac{3}{4}$	$4\frac{1}{8}$	13.0152	4.9893	1.3423	13,063
$6\frac{13}{16}$	$4\frac{3}{16}$	13.1648	5.0466	1.3503	12,915
$6\frac{7}{8}$	$4\frac{1}{4}$	13.3144	5.1040	1.3583	12,770
$6\frac{15}{16}$	$4\frac{5}{16}$	13.4640	5.1613	1.3664	12,628
7	$4\frac{3}{8}$	13.6136	5.2187	1.3745	12,489
$7\frac{1}{16}$	$4\frac{7}{16}$	13.7632	5.2760	1.3828	12,353
$7\frac{5}{8}$	$4\frac{1}{2}$	13.9128	5.3334	1.3912	12,220
$7\frac{3}{16}$	$4\frac{9}{16}$	14.0624	5.3907	1.3996	12,090
$7\frac{1}{4}$	$4\frac{5}{8}$	14.2120	5.4480	1.4082	11,963
$7\frac{5}{16}$	$4\frac{11}{16}$	14.3616	5.5054	1.4168	11,839
$7\frac{3}{8}$	$4\frac{3}{4}$	14.5112	5.5627	1.4256	11,717
$7\frac{7}{16}$	$4\frac{13}{16}$	14.6608	5.6201	1.4344	11,597
$7\frac{1}{2}$	$4\frac{7}{8}$	14.8104	5.6774	1.4433	11,480
$7\frac{9}{16}$	$4\frac{15}{16}$	14.9600	5.7348	1.4523	11,365
$7\frac{5}{8}$	5	15.1096	5.7921	1.4614	11,252

Helical Bar.

MACHINERY AND RAILROAD. — HEAVY STEEL SPRING TABLE.

Diameter of Bar $1\frac{5}{16}$". — Continued.

Outside Diameter.	Inside Diameter.	Length per Inch of Solid Height.	Weight per Inch of Solid Height.	Free Height per Inch of Solid Height.	Capacity.
$7\frac{11}{16}$	$5\frac{1}{16}$	15.2592	5.8495	1.4706	11,142
$7\frac{3}{4}$	$5\frac{1}{8}$	15.4088	5.9068	1.4798	11,034
$7\frac{13}{16}$	$5\frac{3}{16}$	15.5584	5.9642	1.4892	10,928
$7\frac{7}{8}$	$5\frac{1}{4}$	15.7080	6.0215	1.4986	10,824
$7\frac{15}{16}$	$5\frac{5}{16}$	15.8576	6.0789	1.5082	10,722
8	$5\frac{3}{8}$	16.0072	6.1362	1.5178	10,621
$8\frac{1}{16}$	$5\frac{7}{16}$	16.1568	6.1936	1.5276	10,523
$8\frac{1}{8}$	$5\frac{1}{2}$	16.3064	6.2509	1.5374	10,427
$8\frac{3}{16}$	$5\frac{9}{16}$	16.4560	6.3083	1.5473	10,332
$8\frac{1}{4}$	$5\frac{5}{8}$	16.6056	6.3656	1.5573	10,239
$8\frac{5}{16}$	$5\frac{11}{16}$	16.7552	6.4230	1.5674	10,147
$8\frac{3}{8}$	$5\frac{3}{4}$	16.9048	6.4803	1.5775	10,058
$8\frac{7}{16}$	$5\frac{13}{16}$	17.0544	6.5377	1.5878	9,969
$8\frac{1}{2}$	$5\frac{7}{8}$	17.2040	6.5950	1.5982	9,883
$8\frac{9}{16}$	$5\frac{15}{16}$	17.3536	6.6524	1.6086	9,797
$8\frac{5}{8}$	6	17.5032	6.7097	1.6191	9,714
$8\frac{11}{16}$	$6\frac{1}{16}$	17.6528	6.7670	1.6298	9,631
$8\frac{3}{4}$	$6\frac{1}{8}$	17.8024	6.8244	1.6405	9,550
$8\frac{13}{16}$	$6\frac{3}{16}$	17.9520	6.8817	1.6513	9,471
$8\frac{7}{8}$	$6\frac{1}{4}$	18.1016	6.9391	1.6622	9,393
$8\frac{15}{16}$	$6\frac{5}{16}$	18.2512	6.9964	1.6732	9,316
9	$6\frac{3}{8}$	18.4008	7.0538	1.6843	9,240
$9\frac{1}{16}$	$6\frac{7}{16}$	18.5504	7.1111	1.6954	9,165
$9\frac{1}{8}$	$6\frac{1}{2}$	18.7000	7.1685	1.7067	9,092
$9\frac{3}{16}$	$6\frac{9}{16}$	18.8496	7.2258	1.7181	9,020
$9\frac{1}{4}$	$6\frac{5}{8}$	18.9992	7.2832	1.7295	8,949
$9\frac{5}{16}$	$6\frac{11}{16}$	19.1488	7.3405	1.7410	8,879
$9\frac{3}{8}$	$6\frac{3}{4}$	19.2984	7.3979	1.7527	8,810
$9\frac{7}{16}$	$6\frac{13}{16}$	19.4480	7.4552	1.7644	8,742
$9\frac{1}{2}$	$6\frac{7}{8}$	19.5976	7.5126	1.7762	8,676
$9\frac{9}{16}$	$6\frac{15}{16}$	19.7472	7.5699	1.7881	8,610
$9\frac{5}{8}$	7	19.8968	7.6273	1.8001	8,545
$9\frac{11}{16}$	$7\frac{1}{16}$	20.0464	7.6846	1.8121	8,481
$9\frac{3}{4}$	$7\frac{1}{8}$	20.1960	7.7420	1.8243	8,419
$9\frac{13}{16}$	$7\frac{3}{16}$	20.3456	7.7993	1.8366	8,357
$9\frac{7}{8}$	$7\frac{1}{4}$	20.4952	7.8567	1.8489	8,296
$9\frac{15}{16}$	$7\frac{5}{16}$	20.6448	7.9140	1.8613	8,236
10	$7\frac{3}{8}$	20.7944	7.9714	1.8739	8,176

Helical Bar.

MACHINERY AND RAILROAD. — HEAVY STEEL SPRING TABLE.

Diameter of Bar $1\frac{1}{16}$". — Continued.

Outside Diameter.	Inside Diameter.	Length per Inch of Solid Height.	Weight per Inch of Solid Height.	Free Height per Inch of Solid Height.	Capacity.
$10\frac{1}{16}$	$7\frac{7}{16}$	20.9440	8.0287	1.8865	8,118
$10\frac{1}{8}$	$7\frac{1}{2}$	21.0936	8.0860	1.8992	8,060
$10\frac{3}{16}$	$7\frac{9}{16}$	21.2432	8.1434	1.9120	8,004
$10\frac{1}{4}$	$7\frac{5}{8}$	21.3928	8.2007	1.9249	7,948
$10\frac{5}{16}$	$7\frac{11}{16}$	21.5424	8.2581	1.9379	7,892
$10\frac{3}{8}$	$7\frac{3}{4}$	21.6920	8.3154	1.9509	7,838
$10\frac{7}{16}$	$7\frac{13}{16}$	21.8416	8.3728	1.9641	7,784
$10\frac{1}{2}$	$7\frac{7}{8}$	21.9912	8.4301	1.9774	7,731
$10\frac{9}{16}$	$7\frac{15}{16}$	22.1408	8.4875	1.9907	7,679
$10\frac{5}{8}$	8	22.2904	8.5448	2.0041	7,628
$10\frac{11}{16}$	$8\frac{1}{16}$	22.4400	8.6022	2.0177	7,577
$10\frac{3}{4}$	$8\frac{1}{8}$	22.5896	8.6595	2.0313	7,526
$10\frac{13}{16}$	$8\frac{3}{16}$	22.7392	8.7169	2.0450	7,477
$10\frac{7}{8}$	$8\frac{1}{4}$	22.8888	8.7742	2.0588	7,428
$10\frac{15}{16}$	$8\frac{5}{16}$	23.0384	8.8316	2.0727	7,380
11	$8\frac{3}{8}$	23.1880	8.8889	2.0866	7,332
$11\frac{1}{16}$	$8\frac{7}{16}$	23.3376	8.9463	2.1007	7,285
$11\frac{1}{8}$	$8\frac{1}{2}$	23.4872	9.0036	2.1148	7,239
$11\frac{3}{16}$	$8\frac{9}{16}$	23.6368	9.0610	2.1291	7,193
$11\frac{1}{4}$	$8\frac{5}{8}$	23.7864	9.1183	2.1434	7,148
$11\frac{5}{16}$	$8\frac{11}{16}$	23.9360	9.1757	2.1579	7,103
$11\frac{3}{8}$	$8\frac{3}{4}$	24.0856	9.2330	2.1724	7,059
$11\frac{7}{16}$	$8\frac{13}{16}$	24.2352	9.2904	2.1870	7,015
$11\frac{1}{2}$	$8\frac{7}{8}$	24.3848	9.3477	2.2017	6,972
$11\frac{9}{16}$	$8\frac{15}{16}$	24.5344	9.4050	2.2165	6,930
$11\frac{5}{8}$	9	24.6840	9.4624	2.2314	6,888
$11\frac{11}{16}$	$9\frac{1}{16}$	24.8336	9.5197	2.2463	6,846
$11\frac{3}{4}$	$8\frac{1}{8}$	24.9832	9.5771	2.2614	6,805
$11\frac{13}{16}$	$9\frac{3}{16}$	25.1328	9.6344	2.2765	6,765
$11\frac{7}{8}$	$9\frac{1}{4}$	25.2824	9.6918	2.2918	6,725
$11\frac{15}{16}$	$9\frac{5}{16}$	25.4320	9.7491	2.3071	6,685
12	$9\frac{3}{8}$	25.5816	9.8065	2.3225	6,646
$12\frac{1}{16}$	$9\frac{7}{16}$	25.7312	9.8638	2.3381	6,608
$12\frac{1}{8}$	$9\frac{1}{2}$	25.8808	9.9212	2.3537	6,569
$12\frac{3}{16}$	$9\frac{9}{16}$	26.0304	9.9785	2.3694	6,532
$12\frac{1}{4}$	$9\frac{5}{8}$	26.1800	10.0359	2.3851	6,494
$12\frac{5}{16}$	$9\frac{11}{16}$	26.3296	10.0932	2.4010	6,457
$12\frac{3}{8}$	$9\frac{3}{4}$	26.4792	10.1506	2.4170	6,421

Helical Bar.

MACHINERY AND RAILROAD. — HEAVY STEEL SPRING TABLE.

Diameter of Bar $1\frac{5}{16}$". — Continued.

Outside Diameter.	Inside Diameter.	Length per Inch of Solid Height.	Weight per Inch of Solid Height.	Free Height per Inch of Solid Height.	Capacity.
$12\frac{7}{16}$	$9\frac{13}{16}$	26.6288	10.2079	2.4330	6,385
$12\frac{1}{2}$	$9\frac{7}{8}$	26.7784	10.2653	2.4492	6,349
$12\frac{9}{16}$	$9\frac{15}{16}$	26.9280	10.3226	2.4654	6,314
$12\frac{5}{8}$	10	27.0776	10.3800	2.4817	6,279
$12\frac{11}{16}$	$10\frac{1}{16}$	27.2272	10.4373	2.4982	6,245
$12\frac{3}{4}$	$10\frac{1}{8}$	27.3768	10.4947	2.5147	6,210
$12\frac{13}{16}$	$10\frac{3}{16}$	27.5264	10.5520	2.5313	6,177
$12\frac{7}{8}$	$10\frac{1}{4}$	27.6760	10.6094	2.5480	6,143
$12\frac{15}{16}$	$10\frac{5}{16}$	27.8256	10.6667	2.5647	6,110
13	$10\frac{3}{8}$	27.9752	10.7240	2.5816	6,078
$13\frac{1}{16}$	$10\frac{7}{16}$	28.1248	10.7814	2.5986	6,045
$13\frac{1}{8}$	$10\frac{1}{2}$	28.2744	10.8387	2.6156	6,013

Diameter of Bar $1\frac{3}{8}$".

$5\frac{1}{2}$	$2\frac{3}{4}$	9.4248	3.9652	1.1795	19,799
$5\frac{9}{16}$	$2\frac{13}{16}$	9.5676	4.0253	1.1850	19,503
$5\frac{5}{8}$	$2\frac{7}{8}$	9.7104	4.0854	1.1906	19,216
$5\frac{11}{16}$	$2\frac{15}{16}$	9.8532	4.1454	1.1962	18,938
$5\frac{3}{4}$	3	9.9960	4.2055	1.2019	18,667
$5\frac{13}{16}$	$3\frac{1}{16}$	10.1388	4.2656	1.2077	18,404
$5\frac{7}{8}$	$3\frac{1}{8}$	10.2816	4.3257	1.2136	18,149
$5\frac{15}{16}$	$3\frac{3}{16}$	10.4244	4.3857	1.2196	17,900
6	$3\frac{1}{4}$	10.5672	4.4458	1.2257	17,658
$6\frac{1}{16}$	$3\frac{5}{16}$	10.7100	4.5059	1.2318	17,423
$6\frac{1}{8}$	$3\frac{3}{8}$	10.8528	4.5660	1.2380	17,194
$6\frac{3}{16}$	$3\frac{7}{16}$	10.9956	4.6261	1.2443	16,970
$6\frac{1}{4}$	$3\frac{1}{2}$	11.1384	4.6861	1.2507	16,753
$6\frac{5}{16}$	$3\frac{9}{16}$	11.2812	4.7462	1.2572	16,540
$6\frac{3}{8}$	$3\frac{5}{8}$	11.4240	4.8063	1.2637	16,334
$6\frac{7}{16}$	$3\frac{11}{16}$	11.5668	4.8664	1.2704	16,132
$6\frac{1}{2}$	$3\frac{3}{4}$	11.7096	4.9265	1.2771	15,935
$6\frac{9}{16}$	$3\frac{13}{16}$	11.8524	4.9865	1.2838	15,744
$6\frac{5}{8}$	$3\frac{7}{8}$	11.9952	5.0466	1.2908	15,556
$6\frac{11}{16}$	$3\frac{15}{16}$	12.1380	5.1067	1.2977	15,373
$6\frac{3}{4}$	4	12.2808	5.1668	1.3048	15,194
$6\frac{13}{16}$	$4\frac{1}{16}$	12.4236	5.2268	1.3119	15,019
$6\frac{7}{8}$	$4\frac{1}{8}$	12.5664	5.2869	1.3191	14,849

Helical Bar.

MACHINERY AND RAILROAD. — HEAVY STEEL SPRING TABLE.

Diameter of Bar $1\frac{3}{8}$". — Continued.

Outside Diameter.	Inside Diameter.	Length per Inch of Solid Height.	Weight per Inch of Solid Height.	Free Height per Inch of Solid Height.	Capacity.
$6\frac{15}{16}$	$4\frac{3}{16}$	12.7092	5.3470	1.3264	14,682
7	$4\frac{1}{4}$	12.8520	5.4071	1.3338	14,519
$7\frac{1}{16}$	$4\frac{5}{16}$	12.9948	5.4672	1.3413	14,356
$7\frac{1}{8}$	$4\frac{3}{8}$	13.1376	5.5272	1.3488	14,203
$7\frac{3}{16}$	$4\frac{7}{16}$	13.2804	5.5873	1.3564	14,051
$7\frac{1}{4}$	$4\frac{1}{2}$	13.4232	5.6474	1.3641	13,901
$7\frac{5}{16}$	$4\frac{9}{16}$	13.5660	5.7075	1.3719	13,755
$7\frac{3}{8}$	$4\frac{5}{8}$	13.7088	5.7676	1.3798	13,612
$7\frac{7}{16}$	$4\frac{11}{16}$	13.8516	5.8276	1.3878	13,471
$7\frac{1}{2}$	$4\frac{3}{4}$	13.9944	5.8877	1.3958	13,334
$7\frac{9}{16}$	$4\frac{13}{16}$	14.1372	5.9478	1.4039	13,199
$7\frac{5}{8}$	$4\frac{7}{8}$	14.2800	6.0079	1.4121	13,067
$7\frac{11}{16}$	$4\frac{15}{16}$	14.4228	6.0679	1.4204	12,938
$7\frac{3}{4}$	5	14.5656	6.1280	1.4288	12,811
$7\frac{13}{16}$	$5\frac{1}{16}$	14.7084	6.1881	1.4372	12,687
$7\frac{7}{8}$	$5\frac{1}{8}$	14.8512	6.2482	1.4457	12,565
$7\frac{15}{16}$	$5\frac{3}{16}$	14.9940	6.3083	1.4543	12,445
8	$5\frac{1}{4}$	15.1368	6.3683	1.4630	12,327
$8\frac{1}{16}$	$5\frac{5}{16}$	15.2796	6.4284	1.4718	12,212
$8\frac{1}{8}$	$5\frac{3}{8}$	15.4224	6.4885	1.4807	12,099
$8\frac{3}{16}$	$5\frac{7}{16}$	15.5652	6.5486	1.4896	11,988
$8\frac{1}{4}$	$5\frac{1}{2}$	15.7080	6.6087	1.4986	11,879
$8\frac{5}{16}$	$5\frac{9}{16}$	15.8508	6.6687	1.5077	11,772
$8\frac{3}{8}$	$5\frac{5}{8}$	15.9936	6.7288	1.5169	11,667
$8\frac{7}{16}$	$5\frac{11}{16}$	16.1364	6.7889	1.5262	11,564
$8\frac{1}{2}$	$5\frac{3}{4}$	16.2792	6.8490	1.5356	11,462
$8\frac{9}{16}$	$5\frac{13}{16}$	16.4220	6.9091	1.5450	11,363
$8\frac{5}{8}$	$5\frac{7}{8}$	16.5648	6.9691	1.5545	11,265
$8\frac{11}{16}$	$5\frac{15}{16}$	16.7076	7.0292	1.5641	11,168
$8\frac{3}{4}$	6	16.8504	7.0893	1.5738	11,074
$8\frac{13}{16}$	$6\frac{1}{16}$	16.9932	7.1494	1.5836	10,981
$8\frac{7}{8}$	$6\frac{1}{8}$	17.1360	7.2095	1.5934	10,889
$8\frac{15}{16}$	$6\frac{3}{16}$	17.2788	7.2695	1.6034	10,799
9	$6\frac{1}{4}$	17.4216	7.3296	1.6134	10,710
$9\frac{1}{16}$	$6\frac{5}{16}$	17.5644	7.3897	1.6235	10,624
$9\frac{1}{8}$	$6\frac{3}{8}$	17.7072	7.4498	1.6337	10,538
$9\frac{3}{16}$	$6\frac{7}{16}$	17.8500	7.5098	1.6439	10,454
$9\frac{1}{4}$	$6\frac{1}{2}$	17.9928	7.5699	1.6543	10,371

Helical Bar.

MACHINERY AND RAILROAD. — HEAVY STEEL SPRING TABLE.

Diameter of Bar $1\frac{3}{8}$". — Continued.

Outside Diameter.	Inside Diameter.	Length per Inch of Solid Height.	Weight per Inch of Solid Height.	Free Height per Inch of Solid Height.	Capacity.
$9\frac{5}{16}$	$6\frac{9}{16}$	18.1356	7.6300	1.6647	10,289
$9\frac{3}{8}$	$6\frac{5}{8}$	18.2784	7.6901	1.6752	10,209
$9\frac{7}{16}$	$6\frac{11}{16}$	18.4212	7.7502	1.6858	10,130
$9\frac{1}{2}$	$6\frac{3}{4}$	18.5640	7.8102	1.6965	10,052
$9\frac{5}{16}$	$6\frac{13}{16}$	18.7068	7.8703	1.7072	9,975
$9\frac{5}{8}$	$6\frac{7}{8}$	18.8496	7.9304	1.7181	9,899
$9\frac{11}{16}$	$6\frac{15}{16}$	18.9924	7.9905	1.7290	9,825
$9\frac{3}{4}$	7	19.1352	8.0505	1.7400	9,752
$9\frac{13}{16}$	$7\frac{1}{16}$	19.2780	8.1106	1.7511	9,679
$9\frac{7}{8}$	$7\frac{1}{8}$	19.4208	8.1707	1.7622	9,608
$9\frac{15}{16}$	$7\frac{3}{16}$	19.5636	8.2308	1.7735	9,538
10	$7\frac{1}{4}$	19.7064	8.2909	1.7848	9,469
$10\frac{1}{16}$	$7\frac{5}{16}$	19.8492	8.3509	1.7962	9,401
$10\frac{1}{8}$	$7\frac{3}{8}$	19.9920	8.4110	1.8077	9,334
$10\frac{3}{16}$	$7\frac{7}{16}$	20.1348	8.4711	1.8193	9,267
$10\frac{1}{4}$	$7\frac{1}{2}$	20.2776	8.5312	1.8310	9,202
$10\frac{5}{16}$	$7\frac{5}{16}$	20.4204	8.5913	1.8427	9,138
$10\frac{3}{8}$	$7\frac{5}{8}$	20.5632	8.6513	1.8545	9,074
$10\frac{7}{16}$	$7\frac{11}{16}$	20.7060	8.7114	1.8665	9,012
$10\frac{1}{2}$	$7\frac{3}{4}$	20.8488	8.7715	1.8784	8,950
$10\frac{9}{16}$	$7\frac{13}{16}$	20.9916	8.8316	1.8905	8,889
$10\frac{5}{8}$	$7\frac{7}{8}$	21.1344	8.8916	1.9027	8,829
$10\frac{11}{16}$	$7\frac{15}{16}$	21.2772	8.9517	1.9149	8,770
$10\frac{3}{4}$	8	21.4200	9.0118	1.9272	8,711
$10\frac{13}{16}$	$8\frac{1}{16}$	21.5628	9.0719	1.9396	8,653
$10\frac{7}{8}$	$8\frac{1}{8}$	21.7056	9.1320	1.9521	8,597
$10\frac{15}{16}$	$8\frac{3}{16}$	21.8484	9.1920	1.9647	8,541
11	$8\frac{1}{4}$	21.9912	9.2521	1.9774	8,485
$11\frac{1}{16}$	$8\frac{5}{16}$	22.1340	9.3122	1.9901	8,430
$11\frac{1}{8}$	$8\frac{3}{8}$	22.2768	9.3723	2.0029	8,376
$11\frac{3}{16}$	$8\frac{7}{16}$	22.4196	9.4324	2.0158	8,323
$11\frac{1}{4}$	$8\frac{1}{2}$	22.5624	9.4924	2.0288	8,270
$11\frac{5}{16}$	$8\frac{9}{16}$	22.7052	9.5525	2.0418	8,218
$11\frac{3}{8}$	$8\frac{5}{8}$	22.8480	9.6126	2.0550	8,167
$11\frac{7}{16}$	$8\frac{11}{16}$	22.9908	9.6727	2.0682	8,116
$11\frac{1}{2}$	$8\frac{3}{4}$	23.1336	9.7327	2.0815	8,066
$11\frac{9}{16}$	$8\frac{13}{16}$	23.2764	9.7928	2.0949	8,017
$11\frac{5}{8}$	$8\frac{7}{8}$	23.4192	9.8529	2.1084	7,968

Helical Bar.

MACHINERY AND RAILROAD. — HEAVY STEEL SPRING TABLE.

Diameter of Bar $1\frac{3}{8}$". — Continued.

Outside Diameter.	Inside Diameter.	Length per Inch of Solid Height.	Weight per Inch of Solid Height.	Free Height per Inch of Solid Height.	Capacity.
$11\frac{11}{16}$	$8\frac{15}{16}$	23.5620	9.9130	2.1220	7,919
$11\frac{3}{4}$	9	23.7048	9.9731	2.1356	7,872
$11\frac{13}{16}$	$9\frac{1}{16}$	23.8476	10.0331	2.1493	7,825
$11\frac{7}{8}$	$9\frac{1}{8}$	23.9904	10.0932	2.1631	7,778
$11\frac{15}{16}$	$9\frac{3}{16}$	24.1332	10.1533	2.1770	7,732
12	$9\frac{1}{4}$	24.2760	10.2134	2.1910	7,687
$12\frac{1}{16}$	$9\frac{5}{16}$	24.4188	10.2735	2.2050	7,642
$12\frac{1}{8}$	$9\frac{3}{8}$	24.5616	10.3335	2.2192	7,597
$12\frac{3}{16}$	$9\frac{7}{16}$	24.7044	10.3936	2.2334	7,553
$12\frac{1}{4}$	$9\frac{1}{2}$	24.8472	10.4537	2.2477	7,510
$12\frac{5}{16}$	$9\frac{9}{16}$	24.9900	10.5138	2.2621	7,467
$12\frac{3}{8}$	$9\frac{5}{8}$	25.1328	10.5739	2.2765	7,425
$12\frac{7}{16}$	$9\frac{11}{16}$	25.2756	10.6339	2.2911	7,383
$12\frac{1}{2}$	$9\frac{3}{4}$	25.4184	10.6940	2.3057	7,341
$12\frac{9}{16}$	$9\frac{13}{16}$	25.5612	10.7541	2.3204	7,300
$12\frac{5}{8}$	$9\frac{7}{8}$	25.7040	10.8142	2.3352	7,260
$12\frac{11}{16}$	$9\frac{15}{16}$	25.8468	10.8742	2.3501	7,219
$12\frac{3}{4}$	10	25.9896	10.9343	2.3651	7,180
$12\frac{13}{16}$	$10\frac{1}{16}$	26.1324	10.9944	2.3801	7,141
$12\frac{7}{8}$	$10\frac{1}{8}$	26.2752	11.0545	2.3952	7,102
$12\frac{15}{16}$	$10\frac{3}{16}$	26.4180	11.1146	2.4104	7,063
13	$10\frac{1}{4}$	26.5608	11.1746	2.4257	7,025
$13\frac{1}{16}$	$10\frac{5}{16}$	26.7036	11.2347	2.4411	6,988
$13\frac{1}{8}$	$10\frac{3}{8}$	26.8464	11.2948	2.4566	6,951
$13\frac{3}{16}$	$10\frac{7}{16}$	26.9892	11.3549	2.4721	6,914
$13\frac{1}{4}$	$10\frac{1}{2}$	27.1320	11.4150	2.4877	6,877
$13\frac{5}{16}$	$10\frac{9}{16}$	27.2748	11.4750	2.5034	6,841
$13\frac{3}{8}$	$10\frac{5}{8}$	27.4176	11.5351	2.5192	6,806
$13\frac{7}{16}$	$10\frac{11}{16}$	27.5604	11.5952	2.5351	6,771
$13\frac{1}{2}$	$10\frac{3}{4}$	27.7032	11.6553	2.5510	6,736
$13\frac{9}{16}$	$10\frac{13}{16}$	27.8460	11.7153	2.5670	6,701
$13\frac{5}{8}$	$10\frac{7}{8}$	27.9888	11.7754	2.5832	6,667
$13\frac{11}{16}$	$10\frac{15}{16}$	28.1316	11.8355	2.5993	6,633
$13\frac{3}{4}$	11	28.2744	11.8956	2.6156	6,600

Helical Bar.

MACHINERY AND RAILROAD. — HEAVY STEEL SPRING TABLE.

Diameter of Bar $1\frac{7}{16}$".

Outside Diameter.	Inside Diameter.	Length per Inch of Solid Height.	Weight per Inch of Solid Height.	Free Height per Inch of Solid Height.	Capacity.
$5\frac{1}{4}$	$2\frac{7}{8}$	9.4248	4.3339	1.1795	21,640
$5\frac{3}{16}$	$2\frac{15}{16}$	9.5614	4.3967	1.1848	21,330
$5\frac{1}{8}$	3	9.6980	4.4595	1.1901	21,030
$5\frac{1}{16}$	$3\frac{1}{16}$	9.8346	4.5223	1.1955	20,738
6	$3\frac{1}{8}$	9.9712	4.5851	1.2009	20,454
$6\frac{1}{16}$	$3\frac{3}{16}$	10.1078	4.6479	1.2065	20,177
$6\frac{1}{8}$	$3\frac{1}{4}$	10.2443	4.7107	1.2121	19,908
$6\frac{3}{16}$	$3\frac{5}{16}$	10.3809	4.7735	1.2179	19,646
$6\frac{1}{4}$	$3\frac{3}{8}$	10.5175	4.8363	1.2236	19,391
$6\frac{5}{16}$	$3\frac{7}{16}$	10.6541	4.8991	1.2294	19,143
$6\frac{3}{8}$	$3\frac{1}{2}$	10.7907	4.9620	1.2353	18,900
$6\frac{7}{16}$	$3\frac{9}{16}$	10.9273	5.0248	1.2413	18,664
$6\frac{1}{2}$	$3\frac{5}{8}$	11.0639	5.0876	1.2474	18,434
$6\frac{9}{16}$	$3\frac{11}{16}$	11.2005	5.1504	1.2535	18,209
$6\frac{5}{8}$	$3\frac{3}{4}$	11.3371	5.2132	1.2598	17,989
$6\frac{11}{16}$	$3\frac{13}{16}$	11.4737	5.2760	1.2660	17,775
$6\frac{3}{4}$	$3\frac{7}{8}$	11.6103	5.3388	1.2724	17,566
$6\frac{13}{16}$	$3\frac{15}{16}$	11.7469	5.4016	1.2789	17,362
$6\frac{7}{8}$	4	11.8834	5.4644	1.2854	17,162
$6\frac{15}{16}$	$4\frac{1}{16}$	12.0200	5.5772	1.2920	16,967
7	$4\frac{1}{8}$	12.1566	5.5900	1.2987	16,777
$7\frac{1}{16}$	$4\frac{3}{16}$	12.2932	5.6529	1.3054	16,590
$7\frac{1}{8}$	$4\frac{1}{4}$	12.4298	5.7157	1.3122	16,408
$7\frac{3}{16}$	$4\frac{5}{16}$	12.5664	5.7785	1.3191	16,230
$7\frac{1}{4}$	$4\frac{3}{8}$	12.7030	5.8413	1.3261	16,055
$7\frac{5}{16}$	$4\frac{7}{16}$	12.8396	5.9041	1.3332	15,884
$7\frac{3}{8}$	$4\frac{1}{2}$	12.9762	5.9669	1.3403	15,717
$7\frac{7}{16}$	$4\frac{9}{16}$	13.1128	6.0297	1.3475	15,553
$7\frac{1}{2}$	$4\frac{5}{8}$	13.2494	6.0925	1.3548	15,393
$7\frac{9}{16}$	$4\frac{11}{16}$	13.3860	6.1553	1.3621	15,236
$7\frac{5}{8}$	$4\frac{3}{4}$	13.5225	6.2181	1.3695	15,082
$7\frac{11}{16}$	$4\frac{13}{16}$	13.6591	6.2810	1.3771	14,931
$7\frac{3}{4}$	$4\frac{7}{8}$	13.7957	6.3438	1.3846	14,783
$7\frac{13}{16}$	$4\frac{15}{16}$	13.9323	6.4066	1.3923	14,638
$7\frac{7}{8}$	5	14.0689	6.4694	1.4000	14,496
$7\frac{15}{16}$	$5\frac{1}{16}$	14.2055	6.5322	1.4078	14,357
8	$5\frac{1}{8}$	14.3421	6.5950	1.4157	14,220
$8\frac{1}{16}$	$5\frac{3}{16}$	14.4787	6.6578	1.4237	14,086
$8\frac{1}{8}$	$5\frac{1}{4}$	14.6153	6.7206	1.4317	13,954

Helical Bar

MACHINERY AND RAILROAD. — HEAVY STEEL SPRING TABLE.

Diameter of Bar $1\frac{1}{16}$". — Continued.

Outside Diameter.	Inside Diameter.	Length per Inch of Solid Height.	Weight per Inch of Solid Height.	Free Height per Inch of Solid Height.	Capacity.
$8\frac{3}{16}$	$5\frac{5}{16}$	14.7519	6.7834	1.4398	13,825
$8\frac{1}{4}$	$5\frac{3}{8}$	14.8885	6.8462	1.4480	13,698
$8\frac{5}{16}$	$5\frac{7}{16}$	15.0250	6.9091	1.4562	13,574
$8\frac{3}{8}$	$5\frac{1}{2}$	15.1616	6.9719	1.4646	13,452
$8\frac{7}{16}$	$5\frac{9}{16}$	15.2982	7.0347	1.4730	13,331
$8\frac{1}{2}$	$5\frac{5}{8}$	15.4348	7.0975	1.4815	13,213
$8\frac{9}{16}$	$5\frac{11}{16}$	15.5714	7.1603	1.4900	13,098
$8\frac{5}{8}$	$5\frac{3}{4}$	15.7080	7.2231	1.4986	12,984
$8\frac{11}{16}$	$5\frac{13}{16}$	15.8446	7.2859	1.5074	12,872
$8\frac{3}{4}$	$5\frac{7}{8}$	15.9812	7.3487	1.5161	12,762
$8\frac{13}{16}$	$5\frac{15}{16}$	16.1178	7.4115	1.5250	12,654
$8\frac{7}{8}$	6	16.2544	7.4743	1.5339	12,547
$8\frac{15}{16}$	$6\frac{1}{16}$	16.3910	7.5371	1.5430	12,443
9	$6\frac{1}{8}$	16.5275	7.6000	1.5520	12,340
$9\frac{1}{16}$	$6\frac{3}{16}$	16.6641	7.6628	1.5612	12,239
$9\frac{1}{8}$	$6\frac{1}{4}$	16.8007	7.7256	1.5704	12,139
$9\frac{3}{16}$	$6\frac{5}{16}$	16.9373	7.7884	1.5798	12,041
$9\frac{1}{4}$	$6\frac{3}{8}$	17.0739	7.8512	1.5891	11,945
$9\frac{5}{16}$	$6\frac{7}{16}$	17.2105	7.9140	1.5986	11,850
$9\frac{3}{8}$	$6\frac{1}{2}$	17.3471	7.9768	1.6081	11,757
$9\frac{7}{16}$	$6\frac{9}{16}$	17.4837	8.0396	1.6178	11,665
$9\frac{1}{2}$	$6\frac{5}{8}$	17.6203	8.1024	1.6275	11,575
$9\frac{9}{16}$	$6\frac{11}{16}$	17.7569	8.1652	1.6372	11,486
$9\frac{5}{8}$	$6\frac{3}{4}$	17.8935	8.2281	1.6471	11,398
$9\frac{11}{16}$	$6\frac{13}{16}$	18.0301	8.2909	1.6570	11,312
$9\frac{3}{4}$	$6\frac{7}{8}$	18.1666	8.3537	1.6670	11,226
$9\frac{13}{16}$	$6\frac{15}{16}$	18.3032	8.4165	1.6770	11,143
$9\frac{7}{8}$	7	18.4398	8.4793	1.6871	11,060
$9\frac{15}{16}$	$7\frac{1}{16}$	18.5764	8.5421	1.6974	10,979
10	$7\frac{1}{8}$	18.7130	8.6049	1.7077	10,899
$10\frac{1}{16}$	$7\frac{3}{16}$	18.8496	8.6677	1.7181	10,820
$10\frac{1}{8}$	$7\frac{1}{4}$	18.9862	8.7305	1.7285	10,742
$10\frac{3}{16}$	$7\frac{5}{16}$	19.1228	8.7933	1.7391	10,665
$10\frac{1}{4}$	$7\frac{3}{8}$	19.2594	8.8561	1.7496	10,590
$10\frac{5}{16}$	$7\frac{7}{16}$	19.3960	8.9190	1.7603	10,515
$10\frac{3}{8}$	$7\frac{1}{2}$	19.5326	8.9818	1.7710	10,441
$10\frac{7}{16}$	$7\frac{9}{16}$	19.6691	9.0446	1.7819	10,369
$10\frac{1}{2}$	$7\frac{5}{8}$	19.8057	9.1074	1.7927	10,297
$10\frac{9}{16}$	$7\frac{11}{16}$	19.9423	9.1702	1.8037	10,227

Helical Bar.

MACHINERY AND RAILROAD. — HEAVY STEEL SPRING TABLE.

Diameter of Bar $1\frac{7}{16}$". — Continued.

Outside Diameter.	Inside Diameter.	Length per Inch of Solid Height.	Weight per Inch of Solid Height.	Free Height per Inch of Solid Height.	Capacity.
$10\frac{5}{8}$	$7\frac{3}{4}$	20.0789	9.2330	1.8148	10,157
$10\frac{11}{16}$	$7\frac{13}{16}$	20.2155	9.2958	1.8259	10,089
$10\frac{3}{4}$	$7\frac{7}{8}$	20.3521	9.3586	1.8371	10,021
$10\frac{13}{16}$	$7\frac{15}{16}$	20.4887	9.4214	1.8484	9,954
$10\frac{7}{8}$	8	20.6253	9.4842	1.8597	9,888
$10\frac{15}{16}$	$8\frac{1}{16}$	20.7619	9.5471	1.8711	9,823
11	$8\frac{1}{8}$	20.8985	9.6099	1.8826	9,759
$11\frac{1}{16}$	$8\frac{3}{16}$	21.0351	9.6727	1.8942	9,696
$11\frac{1}{8}$	$8\frac{1}{4}$	21.1717	9.7355	1.9059	9,633
$11\frac{3}{16}$	$8\frac{5}{16}$	21.3082	9.7983	1.9176	9,571
$11\frac{1}{4}$	$8\frac{3}{8}$	21.4448	9.8611	1.9294	9,510
$11\frac{3}{16}$	$8\frac{7}{16}$	21.5814	9.9239	1.9413	9,450
$11\frac{3}{8}$	$8\frac{1}{2}$	21.7180	9.9867	1.9532	9,391
$11\frac{7}{16}$	$8\frac{9}{16}$	21.8546	10.0495	1.9653	9,332
$11\frac{1}{2}$	$8\frac{5}{8}$	21.9912	10.1123	1.9774	9,274
$11\frac{9}{16}$	$8\frac{11}{16}$	22.1278	10.1751	1.9895	9,217
$11\frac{5}{8}$	$8\frac{3}{4}$	22.2644	10.2380	2.0018	9,160
$11\frac{11}{16}$	$8\frac{13}{16}$	22.4010	10.3008	2.0141	9,104
$11\frac{3}{4}$	$8\frac{7}{8}$	22.5376	10.3636	2.0265	9,049
$11\frac{13}{16}$	$8\frac{15}{16}$	22.6742	10.4264	2.0390	8,995
$11\frac{7}{8}$	9	22.8107	10.4892	2.0516	8,941
$11\frac{15}{16}$	$9\frac{1}{16}$	22.9473	10.5520	2.0642	8,888
12	$9\frac{1}{8}$	23.0839	10.6148	2.0769	8,835
$12\frac{1}{16}$	$9\frac{3}{16}$	23.2205	10.6776	2.0897	8,783
$12\frac{1}{8}$	$9\frac{1}{4}$	23.3571	10.7404	2.1026	8,732
$12\frac{3}{16}$	$9\frac{5}{16}$	23.4937	10.8032	2.1155	8,681
$12\frac{1}{4}$	$9\frac{3}{8}$	23.6303	10.8661	2.1285	8,631
$11\frac{5}{16}$	$9\frac{7}{16}$	23.7669	10.9289	2.1416	8,581
$12\frac{3}{8}$	$9\frac{1}{2}$	23.9035	10.9917	2.1547	8,532
$21\frac{7}{16}$	$9\frac{9}{16}$	24.0401	11.0545	2.1680	8,484
$12\frac{1}{2}$	$9\frac{5}{8}$	24.1767	11.1173	2.1813	8,436
$12\frac{9}{16}$	$9\frac{11}{16}$	24.3133	11.1801	2.1946	8,388
$12\frac{5}{8}$	$9\frac{3}{4}$	24.4498	11.2429	2.2081	8,341
$22\frac{11}{16}$	$9\frac{13}{16}$	24.5864	11.3057	2.2216	8,295
$12\frac{3}{4}$	$9\frac{7}{8}$	24.7230	11.3685	2.2353	8,249
$12\frac{13}{16}$	$9\frac{15}{16}$	24.8596	11.4313	2.2489	8,204
$12\frac{7}{8}$	10	24.9962	11.4941	2.2627	8,159
$12\frac{15}{16}$	$10\frac{1}{16}$	25.1328	11.5570	2.2765	8,115
13	$10\frac{1}{8}$	25.2694	11.6198	2.2905	8,071

Helical Bar.

MACHINERY AND RAILROAD. — HEAVY STEEL SPRING TABLE.

Diameter of Bar $1\frac{7}{16}$". — Continued.

Outside Diameter.	Inside Diameter.	Length per Inch of Solid Height.	Weight per Inch of Solid Height.	Free Height per Inch of Solid Height.	Capacity.
$13\frac{1}{16}$	$10\frac{3}{16}$	25.4060	11.6826	2.3044	8,028
$13\frac{1}{8}$	$10\frac{1}{4}$	25.5426	11.7454	2.3185	7,985
$13\frac{3}{16}$	$10\frac{5}{16}$	25.6792	11.8082	2.3326	7,942
$13\frac{1}{4}$	$10\frac{3}{8}$	25.8158	11.8710	2.3469	7,900
$13\frac{5}{16}$	$10\frac{7}{16}$	25.9523	11.9338	2.3611	7,859
$13\frac{3}{8}$	$10\frac{1}{2}$	26.0889	11.9666	2.3755	7,817
$13\frac{7}{16}$	$10\frac{9}{16}$	26.2255	12.0594	2.3900	7,777
$13\frac{1}{2}$	$10\frac{5}{8}$	26.3621	12.1222	2.4045	7,736
$13\frac{9}{16}$	$10\frac{11}{16}$	26.4987	12.1851	2.4191	7,697
$13\frac{5}{8}$	$10\frac{3}{4}$	26.6353	12.2479	2.4337	7,657
$13\frac{11}{16}$	$10\frac{13}{16}$	26.7719	12.3107	2.4485	7,618
$13\frac{3}{4}$	$10\frac{7}{8}$	26.9085	12.3735	2.4633	7,579
$13\frac{13}{16}$	$10\frac{15}{16}$	27.0451	12.4363	2.4782	7,541
$13\frac{7}{8}$	11	27.1817	12.4991	2.4931	7,503
$13\frac{15}{16}$	$11\frac{1}{16}$	27.3183	12.5619	2.5082	7,466
14	$11\frac{1}{8}$	27.4549	12.6247	2.5233	7,428
$14\frac{1}{16}$	$11\frac{3}{16}$	27.5914	12.6875	2.5385	7,392
$14\frac{1}{8}$	$11\frac{1}{4}$	27.7280	12.7503	2.5538	7,355
$14\frac{3}{16}$	$11\frac{5}{16}$	27.8646	12.8131	2.5691	7,319
$14\frac{1}{4}$	$11\frac{3}{8}$	28.0012	12.8760	2.5845	7,284
$14\frac{5}{16}$	$11\frac{7}{16}$	28.1378	12.9388	2.6000	7,248
$14\frac{3}{8}$	$11\frac{1}{2}$	28.2744	13.0016	2.6156	7,213

Diameter of Bar $1\frac{1}{2}$".

6	3	9.4248	4.7189	1.1795	23,562
$6\frac{1}{16}$	$3\frac{1}{16}$	9.5557	4.7845	1.1845	23,239
$6\frac{1}{8}$	$3\frac{1}{8}$	9.6866	4.8500	1.1896	22,925
$6\frac{3}{16}$	$3\frac{3}{16}$	9.8175	4.9156	1.1948	22,620
$6\frac{1}{4}$	$3\frac{1}{4}$	-9.9484	4.9811	1.2000	22,322
$6\frac{5}{16}$	$3\frac{5}{16}$	10.0793	5.0466	1.2053	22,032
$6\frac{3}{8}$	$3\frac{3}{8}$	10.2102	5.1122	1.2107	21,750
$6\frac{7}{16}$	$3\frac{7}{16}$	10.3411	5.1777	1.2161	21,474
$6\frac{1}{2}$	$3\frac{1}{2}$	10.4720	5.2433	1.2216	21,206
$6\frac{9}{16}$	$3\frac{9}{16}$	10.6029	5.3088	1.2272	20,944
$6\frac{5}{8}$	$3\frac{5}{8}$	10.7338	5.3743	1.2328	20,689
$6\frac{11}{16}$	$3\frac{11}{16}$	10.8647	5.4399	1.2386	20,439
$6\frac{3}{4}$	$3\frac{3}{4}$	10.9956	5.5054	1.2443	20,196
$6\frac{13}{16}$	$3\frac{13}{16}$	11.1265	5.5710	1.2502	19,958

Helical Bar.

MACHINERY AND RAILROAD. — HEAVY STEEL SPRING TABLE.

Diameter of Bar $1\frac{1}{2}$". — Continued.

Outside Diameter.	Inside Diameter.	Length per Inch of Solid Height.	Weight per Inch of Solid Height.	Free Height per Inch of Solid Height.	Capacity.
$6\frac{7}{8}$	$3\frac{7}{8}$	11.2574	5.6365	1.2561	19,726
$6\frac{15}{16}$	$3\frac{15}{16}$	11.3883	5.7020	1.2621	19,500
7	4	11.5192	5.7676	1.2682	19,278
$7\frac{1}{16}$	$4\frac{1}{16}$	11.6501	5.8331	1.2743	19,061
$7\frac{1}{8}$	$4\frac{1}{8}$	11.7810	5.8987	1.2805	18,850
$7\frac{3}{16}$	$4\frac{3}{16}$	11.9119	5.9642	1.2868	18,642
$7\frac{1}{4}$	$4\frac{1}{4}$	12.0428	6.0297	1.2931	18,440
$7\frac{5}{16}$	$4\frac{5}{16}$	12.1737	6.0953	1.2995	18,242
$7\frac{3}{8}$	$4\frac{3}{8}$	12.3046	6.1608	1.3060	18,048
$7\frac{7}{16}$	$4\frac{7}{16}$	12.4355	6.2264	1.3125	17,858
$7\frac{1}{2}$	$4\frac{1}{2}$	12.5664	6.2919	1.3191	17,672
$7\frac{9}{16}$	$4\frac{9}{16}$	12.6973	6.3574	1.3258	17,489
$7\frac{5}{8}$	$4\frac{5}{8}$	12.8282	6.4230	1.3326	17,311
$7\frac{11}{16}$	$4\frac{11}{16}$	12.9591	6.4885	1.3394	17,136
$7\frac{3}{4}$	$4\frac{3}{4}$	13.0900	6.5541	1.3463	16,965
$7\frac{13}{16}$	$4\frac{13}{16}$	13.2209	6.6196	1.3532	16,797
$7\frac{7}{8}$	$4\frac{7}{8}$	13.3518	6.6851	1.3603	16,632
$7\frac{15}{16}$	$4\frac{15}{16}$	13.4827	6.7507	1.3674	16,470
8	5	13.6136	6.8162	1.3745	16,312
$8\frac{1}{16}$	$5\frac{1}{16}$	13.7445	6.8818	1.3818	16,157
$8\frac{1}{8}$	$5\frac{1}{8}$	13.8754	6.9473	1.3891	16,004
$8\frac{3}{16}$	$5\frac{3}{16}$	14.0063	7.0128	1.3965	15,855
$8\frac{1}{4}$	$5\frac{1}{4}$	14.1372	7.0784	1.4039	15,708
$8\frac{5}{16}$	$5\frac{5}{16}$	14.2681	7.1439	1.4114	15,564
$8\frac{3}{8}$	$5\frac{3}{8}$	14.3990	7.2095	1.4190	15,422
$8\frac{7}{16}$	$5\frac{7}{16}$	14.5299	7.2750	1.4267	15,283
$8\frac{1}{2}$	$5\frac{1}{2}$	14.6608	7.3405	1.4344	15,147
$8\frac{9}{16}$	$5\frac{9}{16}$	14.7917	7.4061	1.4422	15,013
$8\frac{5}{8}$	$5\frac{5}{8}$	14.9226	7.4716	1.4500	14,881
$8\frac{11}{16}$	$5\frac{11}{16}$	15.0535	7.5372	1.4580	14,752
$8\frac{3}{4}$	$5\frac{3}{4}$	15.1844	7.6027	1.4660	14,625
$8\frac{13}{16}$	$5\frac{13}{16}$	15.3153	7.6683	1.4740	14,500
$8\frac{7}{8}$	$5\frac{7}{8}$	15.4462	7.7338	1.4822	14,377
$8\frac{15}{16}$	$5\frac{15}{16}$	15.5771	7.7993	1.4904	14,256
9	6	15.7080	7.8649	1.4986	14,137
$9\frac{1}{16}$	$6\frac{1}{16}$	15.8389	7.9304	1.5070	14,020
$9\frac{1}{8}$	$6\frac{1}{8}$	15.9698	7.9960	1.5154	13,905
$9\frac{3}{16}$	$6\frac{3}{16}$	16.1007	8.0615	1.5239	13,792

Helical Bar.

MACHINERY AND RAILROAD.—HEAVY STEEL SPRING TABLE.

***Diameter of Bar* 1½″.**—Continued.

Outside Diameter.	Inside Diameter.	Length per Inch of Solid Height.	Weight per Inch of Solid Height.	Free Height per Inch of Solid Height.	Capacity.
9¼	6¼	16.2316	8.1270	1.5324	13,681
9 5/16	6 5/16	16.3625	8.1926	1.5411	13,572
9⅜	6⅜	16.4934	8.2581	1.5498	13,464
9 7/16	6 7/16	16.6243	8.3237	1.5585	13,358
9½	6½	16.7552	8.3892	1.5673	13,254
9 9/16	6 9/16	16.8861	8.4547	1.5762	13,151
9⅝	6⅝	17.0170	8.5203	1.5852	13,050
9 11/16	6 11/16	17.1479	8.5858	1.5943	12,950
9¾	6¾	17.2788	8.6514	1.6034	12,852
9 13/16	6 13/16	17.4097	8.7169	1.6125	12,755
9⅞	6⅞	17.5406	8.7824	1.6218	12,660
9 15/16	6 15/16	17.6715	8.8480	1.6311	12,566
10	7	17.8024	8.9135	1.6405	12,474
10 1/16	7 1/16	17.9333	8.9791	1.6499	12,383
10⅛	7⅛	18.0642	9.0446	1.6595	12,293
10 3/16	7 3/16	18.1951	9.1101	1.6690	12,205
10¼	7¼	18.3260	9.1757	1.6787	12,118
10 5/16	7 5/16	18.4569	9.2412	1.6884	12,032
10⅜	7⅜	18.5878	9.3068	1.6982	11,947
10 7/16	7 7/16	18.7187	9.3723	1.7081	11,863
10½	7½	18.8496	9.4378	1.7180	11,781
10 9/16	7 9/16	18.9805	9.5034	1.7281	11,700
10⅝	7⅝	19.1114	9.5689	1.7381	11,620
10 11/16	7 11/16	19.2423	9.6345	1.7483	11,540
10¾	7¾	19.3732	9.7000	1.7585	11,463
10 13/16	7 13/16	19.5041	9.7656	1.7688	11,386
10⅞	7⅞	19.6350	9.8311	1.7791	11,310
10 15/16	7 15/16	19.7659	9.8966	1.7896	11,235
11	8	19.8968	9.9622	1.8000	11,161
11 1/16	8 1/16	20.0277	10.0277	1.8106	11,088
11⅛	8⅛	20.1586	10.0933	1.8212	11,016
11 3/16	8 3/16	20.2895	10.1588	1.8319	10,945
11¼	8¼	20.4204	10.2243	1.8427	10,875
11 5/16	8 5/16	20.5513	10.2899	1.8535	10,806
11⅜	8⅜	20.6822	10.3554	1.8645	10,737
11 7/16	8 7/16	20.8131	10.4210	1.8754	10,670
11½	8½	20.9440	10.4865	1.8865	10,603
11 9/16	8 9/16	21.0749	10.5520	1.8976	10,537

Helical Bar.

MACHINERY AND RAILROAD. — HEAVY STEEL SPRING TABLE.

Diameter of Bar. 1½". — Continued.

Outside Diameter.	Inside Diameter.	Length per Inch of Solid Height.	Weight per Inch of Solid Height.	Free Height per Inch of Solid Height.	Capacity.
11 5/8	8 5/8	21.2058	10.6176	1.9088	10,472
11 11/16	8 11/16	21.3367	10.6831	1.9200	10,408
11 3/4	8 3/4	21.4676	10.7487	1.9314	10,344
11 13/16	8 13/16	21.5985	10.8142	1.9427	10,282
11 7/8	8 7/8	21.7294	10.8797	1.9542	10,220
11 15/16	8 15/16	21.8603	10.9453	1.9657	10,158
12	9	21.9912	11.0108	1.9773	10,098
12 1/16	9 1/16	22.1221	11.0764	1.9890	10,038
12 1/8	9 1/8	22.2530	11.1419	2.0007	9,978
12 3/16	9 3/16	22.3839	11.2074	2.0126	9,921
12 1/4	9 1/4	22.5148	11.2730	2.0244	9,863
12 5/16	9 5/16	22.6457	11.3385	2.0364	9,806
12 3/8	9 3/8	22.7766	11.4040	2.0484	9,749
12 7/16	9 7/16	22.9075	11.4696	2.0605	9,694
12 1/2	9 1/2	23.0384	11.5351	2.0726	9,639
12 9/16	9 9/16	23.1693	11.6007	2.0849	9,584
12 5/8	9 5/8	23.3002	11.6662	2.0972	9,531
12 11/16	9 11/16	23.4311	11.7317	2.1095	9,477
12 3/4	9 3/4	23.5620	11.7973	2.1219	9,425
12 13/16	9 13/16	23.6929	11.8628	2.1344	9,373
12 7/8	9 7/8	23.8238	11.9284	2.1470	9,321
12 15/16	9 15/16	23.9547	11.9939	2.1597	9,270
13	10	24.0856	12.0594	2.1724	9,220
13 1/16	10 1/16	24.2165	12.1250	2.1851	9,170
13 1/8	10 1/8	24.3474	12.1905	2.1980	9,121
13 3/16	10 3/16	24.4783	12.2561	2.2109	9,072
13 1/4	10 1/4	24.6092	12.3216	2.2239	9,024
13 5/16	10 5/16	24.7401	12.3871	2.2369	8,976
13 3/8	10 3/8	24.8710	12.4527	2.2501	8,929
13 7/16	10 7/16	25.0019	12.5182	2.2633	8,882
13 1/2	10 1/2	25.1328	12.5838	2.2765	8,836
13 9/16	10 9/16	25.2637	12.6493	2.2899	8,790
13 5/8	10 5/8	25.3946	12.7148	2.3033	8,745
13 11/16	10 11/16	25.5255	12.7804	2.3167	8,700
13 3/4	10 3/4	25.6564	12.8459	2.3303	8,655
13 13/16	10 13/16	25.7873	12.9115	2.3439	8,612
13 7/8	10 7/8	25.9182	12.9770	2.3576	8,568
13 15/16	10 15/16	26.0491	13.0425	2.3713	8,525
14	11	26.1800	13.1081	2.3851	8,482

Helical Bar.

MACHINERY AND RAILROAD. — HEAVY STEEL SPRING TABLE.

Diameter of Bar 1½". — Continued.

Outside Diameter.	Inside Diameter.	Length per Inch of Solid Height.	Weight per Inch of Solid Height.	Free Height per Inch of Solid Height.	Capacity.
14 1/16	11 1/16	26.3109	13.1736	2.3990	8,440
14 1/8	11 1/8	26.4418	13.2392	2.4130	8,398
14 3/16	11 3/16	26.5727	13.3047	2.4270	8,357
14 1/4	11 1/4	26.7036	13.3702	2.4411	8,316
14 5/16	11 5/16	26.8345	13.4358	2.4552	8,275
14 3/8	11 3/8	26.9654	13.5013	2.4695	8,235
14 7/16	11 7/16	27.0963	13.5669	2.4838	8,195
14 1/2	11 1/2	27.2272	13.6324	2.4981	8,156
14 9/16	11 9/16	27.3581	13.6979	2.5126	8,117
14 5/8	11 5/8	27.4890	13.7634	2.5271	8,078
14 11/16	11 11/16	27.6199	13.8290	2.5417	8,040
14 3/4	11 3/4	27.7508	13.8946	2.5563	8,002
14 13/16	11 13/16	27.8817	13.9601	2.5710	7,965
14 7/8	11 7/8	28.0126	14.0256	2.5858	7,927
14 15/16	11 15/16	28.1435	14.0912	2.6001	7,891
15	12	28.2744	14.1567	2.6156	7,854

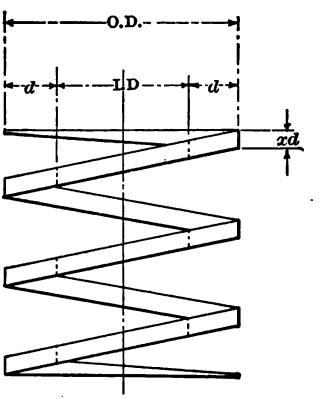
HELICAL.

RECTANGULAR AND ELLIPTICAL SECTIONS.

In designing springs it is found to be sometimes desirable to use other than the solid circular bar sections.

Rectangular and elliptical sections allow the inside, outside, and mean diameters to be retained, while the free height, deflection, or load at a given height, may be varied for a constant solid height.

The following table serves to compare the effect of the different sections possible, and may also be conveniently used in connection with the Helical Bar Table for estimating the properties of springs composed of such sections.



In a rectangular or elliptical section one-half the outside diameter of the spring less one-half the inside diameter is equivalent to "Diameter of Bar" in the Helical Bar Table. Knowing the O. D. of a rectangular or elliptical section spring and the equivalent "diameter of bar," ascertain the load and deflection under that diameter of bar and O. D. in the Helical Bar Table. Then for a rectangular or elliptical section:

For load. — Divide load given in Helical Bar Table by 31,416 and multiply by C.

For deflection. — Divide deflection given in Helical Bar Table by .019946 and multiply by K.

In the following table it is interesting to note that the product of Pf is a constant for all rectangular sections, that is, a straight line; while for elliptical sections it increases on a parabolic line to the maximum or circular value, from which it retreats on another parabolic line.

From the foregoing,

O. D. = a constant,
I. D. = a constant,
d = a constant.

while the edge upon which the bar is rolled is equal to xd, x being a variable.

	Load $= \frac{Cd^3}{D} = P.$		Deflection per inch of Solid Height $= K\left(\frac{D}{d}\right)^2 = f.$		$Pf = MdD^2$	
$X.$	C—Rectangular.	C—Elliptical.	K—Rectangular.	K—Elliptical.	M—Rectangular.	M—Elliptical.
.1	2,680	1,587	.198470	.19946	531.91	316.445
.2	5,439	3,267	.097794	.099730	531.91	325.844
.3	8,352	5,137	.063683	.066487	531.91	341.512
.4	11,488	7,289	.046299	.049865	531.91	363.442
.5	14,907	9,818	.035681	.039892	531.91	391.640
.6	18,659	12,818	.028506	.033242	531.91	426.087
.7	22,786	16,383	.023343	.028494	531.91	466.830
.8	27,320	20,609	.019469	.024933	531.91	513.842
.9	32,289	25,588	.016473	.022162	531.91	567.089
1.0	37,712	31,416	.014104	.019946	531.91	626.624
1.1	43,608	34,715	.012197	.016484	531.91	572.237
1.2	49,986	38,328	.010641	.013851	531.91	530.874
1.3	45,858	42,255	.0093549	.011802	531.91	498.688
1.4	46,232	46,496	.0082810	.010177	531.91	473.187
1.5	72,112	51,051	.0073760	.0088649	531.91	452.562
1.6	80,504	55,920	.0066071	.0077914	531.91	435.699
1.7	89,413	61,104	.0059488	.0069017	531.91	421.722
1.8	98,839	66,602	.0053813	.0061562	531.91	410.015
1.9	108,787	72,414	.0048894	.0055252	531.91	400.101
2.0	119,259	78,540	.0044601	.0049865	531.91	391.640
3.0	252,986	157,080	.0021025	.0022162	531.91	348.121
4.0	439,804	267,036	.0012094	.0012466	531.91	332.887
5.0	679,878	408,408	.00078235	.00079784	531.91	325.844
6.0	973,254	581,196	.00054652	.00055406	531.91	322.017
7.0	1,319,950	785,400	.00040297	.00040706	531.91	319.705
8.0	1,719,970	1,121,020	.00030925	.00031166	531.91	318.211
9.0	2,173,321	1,288,056	.00024474	.00024625	531.91	317.184
10.0	2,680,001	1,586,508	.00019847	.00019946	531.91	316.445

Elliptical Sheet.

LIGHT STEEL SPRING TABLE.

P multiplied by thickness of steel = load on one plate one inch wide
f multiplied by thickness of steel = deflection under above load.

$\frac{L}{h}$.	*P*.	*f*.	$\frac{L}{h}$.	*P*.	*f*.
60	888	5.66	92	580	13.34
62	860	6.06	94	568	13.92
64	834	6.46	96	556	14.52
66	808	6.86	98	544	15.12
68	784	7.28	100	534	15.74
70	762	7.72	102	522	16.38
72	740	8.16	104	512	17.04
74	720	8.62	106	504	17.70
76	702	9.10	108	494	18.36
78	684	9.58	110	484	19.06
80	666	10.08	112	476	19.76
82	650	10.58	114	468	20.46
84	634	11.12	116	460	21.20
86	620	11.64	118	452	21.92
88	606	12.18	120	444	22.68
90	592	12.76	122	438	23.44

Elliptical Bar.

CARRIAGE. — MEDIUM WEIGHT STEEL SPRING TABLE.

To find the load for any spring divide the constant given under *P* by the net length; the result will be the load at 80,000 pounds fiber strain.

To find the deflection for any spring multiply the constant given under *f* by the square of the net length; the result will be the deflection under the above load.

Thickness of Leaf.	*P.*	*f.*	Thickness of Leaf.	*P.*	*f.*
1/32	52.0833	.050393	17/32	15052.0833	.0029643
1/16	208.3333	.025196	9/16	16875.0000	.0027996
3/32	468.7500	.016798	19/32	18802.0833	.0026522
1/8	833.3333	.012598	5/8	20833.3333	.0025196
5/32	1302.0833	.010079	21/32	22968.7500	.0023997
3/16	1875.0000	.0083988	11/16	25208.3333	.0022905
7/32	2552.0833	.0071990	23/32	27552.0833	.0021910
1/4	3333.3333	.0062991	3/4	30000.0000	.0020997
9/32	4218.7500	.0055992	25/32	32552.0833	.0020157
5/16	5208.3333	.0050393	13/16	35208.3333	.0019381
11/32	6302.0833	.0045812	27/32	37963.7500	.0018663
3/8	7500.0000	.0041994	7/8	40833.3333	.0017997
13/32	8802.0833	.0038764	29/32	43802.0833	.0017377
7/16	10208.3333	.0035995	15/16	46875.0000	.0016798
15/32	11718.7500	.0033595	31/32	50052.0833	.0016256
1/2	13333.3333	.0031496	1	53333.3333	.0015748

Elliptical Plate.

MACHINERY AND RAILROAD. — HEAVY STEEL SPRING TABLE.

In the following tables load is for one leaf one inch wide.

For springs with a percentage of full-length leaves multiply the deflection by $\frac{2}{2+r}$,

where $$r = \frac{\text{No. full length leaves}}{\text{No. total of leaves.}}$$

Fiber strain produced is 80,000 pounds per square inch.

Test load: 125 per cent of the following with deflection 125 per cent of the following.

Fiber strain, 100,000 pounds for test load.

Semi-elliptics: deflection one-half that given. Load, same.

Net length = distance $C - C$ minus width of band.

½" Steel.

Net Length.	Load on One Plate One Inch Wide.	Corresponding Deflection.	Net Length.	Load on One Plate One Inch Wide.	Corresponding Deflection.
30	444	2.83	46	290	6.67
31	430	3.03	47	284	6.96
32	417	3.23	48	278	7.26
33	404	3.43	49	272	7.56
34	392	3.64	50	267	7.87
35	381	3.86	51	261	8.19
36	370	4.08	52	256	8.52
37	360	4.31	53	252	8.85
38	351	4.55	54	247	9.18
39	342	4.79	55	242	9.53
40	333	5.04	56	238	9.88
41	325	5.29	57	234	10.23
42	317	5.56	58	230	10.60
43	310	5.82	59	226	10.96
44	303	6.09	60	222	11.34
45	296	6.38	61	219	11.72

Elliptical Plate.

MACHINERY AND RAILROAD. — HEAVY STEEL SPRING TABLE.

$\frac{7}{16}$" *Steel.*

Net Length.	Load on One Plate One Inch Wide.	Corresponding Deflection.	Net Length.	Load on One Plate One Inch Wide.	Corresponding Deflection.
24	425	2.07	40	255	5.76
25	408	2.25	41	249	6.05
26	393	2.43	42	243	6.35
27	374	2.62	43	237	6.66
28	365	2.82	44	232	6.97
29	352	3.03	45	227	7.29
30	340	3.24	46	222	7.62
31	329	3.46	47	217	7.95
32	319	3.69	48	213	8.29
33	309	3.92	49	208	8.64
34	300	4.16	50	204	9.00
35	292	4.41	51	200	9.36
36	284	4.66	52	196	9.73
37	276	4.93	53	193	10.11
38	269	5.20	54	189	10.50
39	262	5.47	55	186	10.89

Elliptical Plate.

MACHINERY AND RAILROAD. — HEAVY STEEL SPRING TABLE.

⅜″ Steel.

Net Length.	Load on One Plate One Inch Wide.	Corresponding Deflection.	Net Length.	Load on One Plate One Inch Wide.	Corresponding Deflection.
20	375	1.68	36	208	5.44
21	357	1.85	37	203	5.75
22	341	2.03	38	197	6.06
23	326	2.22	39	192	6.39
24	313	2.42	40	188	6.72
25	300	2.62	41	183	7.06
26	288	2.84	42	179	7.41
27	278	3.06	43	174	7.76
28	268	3.29	44	170	8.13
29	259	3.53	45	167	8.50
30	250	3.78	46	163	8.89
31	242	4.04	47	160	9.28
32	234	4.30	48	156	9.68
33	227	4.57	49	153	10.08
34	221	4.85	50	150	10.50
35	214	5.14	51	147	10.92

Elliptical Plate.

MACHINERY AND RAILROAD. — HEAVY STEEL SPRING TABLE.

$\frac{11}{32}$" *Steel.*

Net Length.	Load on One Plate One Inch Wide.	Corresponding Deflection.	Net Length.	Load on One Plate One Inch Wide.	Corresponding Deflection.
18	350	1.48	34	185	5.30
19	332	1.65	35	180	5.61
20	315	1.83	36	175	5.94
21	300	2.02	37	170	6.27
22	286	2.22	38	166	6.62
23	274	2.42	39	162	6.97
24	263	2.64	40	158	7.33
25	252	2.86	41	154	7.70
26	242	3.10	42	150	8.08
27	233	3.34	43	147	8.47
28	225	3.59	44	143	8.87
29	217	3.85	45	140	9.28
30	210	4.12	46	137	9.69
31	203	4.40	47	134	10.12
32	197	4.69	48	131	10.56
33	191	4.99	49	129	11.00

Elliptical Plate.

MACHINERY AND RAILROAD. — HEAVY STEEL SPRING TABLE.

$\frac{5}{16}$" Steel.

Net Length.	Load on One Plate One Inch Wide.	Corresponding Deflection.	Net Length.	Load on One Plate One Inch Wide.	Corresponding Deflection.
16	326	1.29	32	163	5.16
17	306	1.46	33	158	5.49
18	289	1.63	34	153	5.83
19	274	1.82	35	149	6.17
20	260	2.01	36	145	6.53
21	248	2.22	37	141	6.90
22	237	2.44	38	137	7.28
23	226	2.67	39	134	7.66
24	217	2.90	40	130	8.06
25	208	3.15	41	127	8.47
26	200	3.41	42	124	8.89
27	193	3.67	43	121	9.32
28	186	3.95	44	118	9.76
29	180	4.24	45	115	10.20
30	174	4.54	46	113	10.66
31	168	4.84	47	111	11.13

Elliptical Take-Up.

Divide height by span, or set by net distance center to center. Length of leaf equals distance $C-C$ times corresponding number in length column.

$\frac{H}{S}$.	Length.	$\frac{H}{S}$.	Length.	$\frac{H}{S}$.	Length.	$\frac{H}{S}$.	Length.	$\frac{H}{S}$.	Length.
.001	1.00002	.148	1.05743	.236	1.14247	.324	1.25988	.412	1.40432
.005	1.00007	.150	1.05896	.238	1.14480	.326	1.26288	.414	1.40788
.010	1.00027	.152	1.06051	.240	1.14714	.328	1.26588	.416	1.41145
.015	1.00061	.154	1.06209	.242	1.14951	.330	1.26892	.418	1.41503
.020	1.00107	.156	1.06368	.244	1.15189	.332	1.27196	.420	1.41861
.025	1.00167	.158	1.06530	.246	1.15428	.334	1.27502	.422	1.42221
.030	1.00240	.160	1.06693	.248	1.15670	336	1.27810	.424	1.42583
.035	1.00327	.162	1.06858	.250	1.15912	.338	1.28118	.426	1.42945
.040	1.00426	.164	1.07025	.252	1.16156	.340	1.28428	.428	1.43309
.045	1.00539	.166	1.07194	.254	1.16402	.342	1.28739	.430	1.43673
.050	1.00665	.168	1.07365	.256	1.16650	.344	1.29052	.432	1.44039
.055	1.00805	.170	1.07537	.258	1.16899	.346	1.29366	.434	1.44405
.060	1.00957	.172	1.07711	.260	1.17150	.348	1.29681	.436	1.44773
.065	1.01123	.174	1.07888	.262	1.17403	.350	1.29997	.438	1.45142
.070	1.01302	.176	1.08066	.264	1.17657	.352	1.30315	.440	1.45512
.075	1.01493	.178	1.08246	.266	1.17912	.354	1.30634	.442	1.45883
.080	1.01698	.180	1.08428	.268	1.18169	.356	1.30954	.444	1.46255
.085	1.01916	.182	1.08611	.270	1.18429	.358	1.31276	.446	1.46628
.090	1.02146	.184	1.08797	.272	1.18689	.360	1.31599	.448	1.47002
.095	1.02389	.186	1.08984	.274	1.18951	.362	1.31923	.450	1.47377
.100	1.02646	.188	1.09174	.276	1.19214	.364	1.32249	.452	1.47753
.102	1.02752	.190	1.09365	.278	1.19479	.366	1.32577	.454	1.48131
.104	1.02860	.192	1.09557	.280	1.19746	.368	1.32905	.456	1.48509
.106	1.02970	.194	1.09752	.282	1.20014	.370	1.33234	.458	1.48889
.108	1.03082	.196	1.09949	.284	1.20284	.372	1.33564	.460	1.49269
.110	1.03196	.198	1.10147	.286	1.20555	.374	1.33896	.462	1.49651
.112	1.03312	.200	1.10347	.288	1.20827	.376	1.34229	.464	1.50033
.114	1.03430	.202	1.10548	.290	1.21102	.378	1.34563	.466	1.50416
.116	1.03551	.204	1.10752	.292	1.21377	.380	1.34899	.468	1.50800
.118	1.03672	.206	1.10958	.294	1.21654	.382	1.35237	.470	1.51185
.120	1.03797	.208	1.11165	.296	1.21933	.384	1.35575	.472	1.51571
.122	1.03923	.210	1.11374	.298	1.22213	.386	1.35914	.474	1.51958
.124	1.04051	.212	1.11584	.300	1.22495	.388	1.36254	.476	1.52346
.126	1.04181	.214	1.11796	.302	1.22778	.390	1.36596	.478	1.52736
.128	1.04313	.216	1.12011	.304	1.23063	.392	1.36939	.480	1.53126
.130	1.04447	.218	1.12225	.306	1.23349	.394	1.37283	.482	1.53518
.132	1.04584	.220	1.12444	.308	1.23636	.396	1.37628	.484	1.53910
.134	1.04722	.222	1.12664	.310	1.23926	.398	1.37974	.486	1.54302
.136	1.04862	.224	1.12885	.312	1.24216	.400	1.38322	.488	1.54696
.138	1.05003	.226	1.13108	.314	1.24507	.402	1.38671	.490	1.55091
.140	1.05147	.228	1.13331	.316	1.24801	.404	1.39021	.492	1.55487
.142	1.05293	.230	1.13557	.318	1.25095	.406	1.39372	.494	1.55854
.144	1.05441	.232	1.13785	.320	1.25391	.408	1.39724	.496	1.56282
.146	1.05591	.234	1.14015	.322	1.25689	.410	1.40077	.498	1.56681

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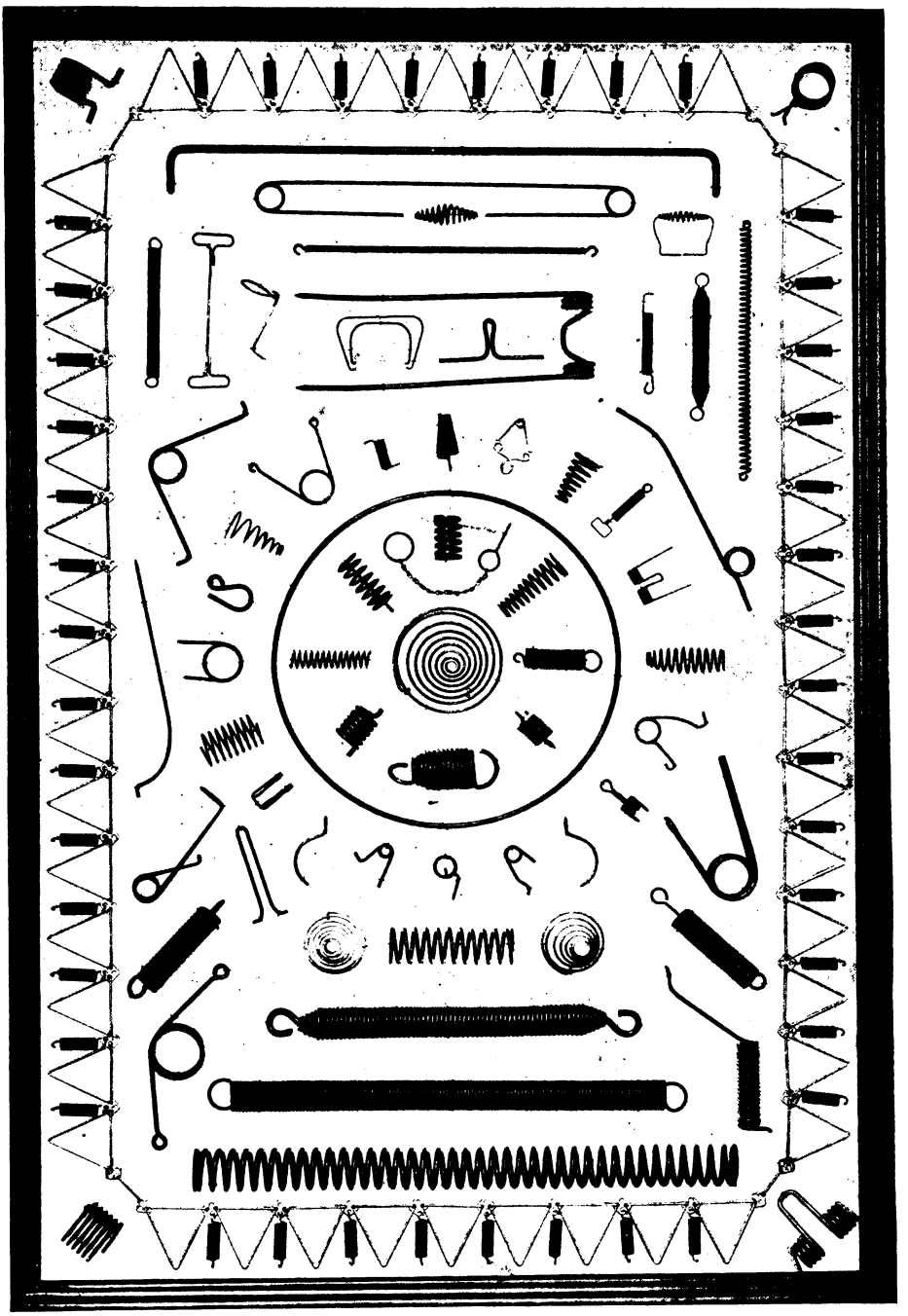

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